Animate Creation

ILLUSTRATED

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Animate Creation;

POPULAR EDITION OF

"OUR LIVING WORLD,"

A NATURAL HISTORY

BY

THE REV. J. G. WOOD.

REVISED AND ADAPTED TO

AMERICAN ZOOLOGY,

BY

JOSEPH B. HOLDER, M.D.,

Fellow of the New York Academy of Sciences; Member of the Society of Naturalists, E. U. S.; Member of the American Ornithologists' Union; Curator of Vertebrate Zoology, American Museum of Natural History, Central Park, New York.

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PREFACE.

In the present Volume I have endeavored to present to the reader the outlines of zoologic knowledge in a form that shall be readily comprehended. In accordance with this principle, the technical language of scientific Zoology has been carefully avoided, and English names have been employed wherever practicable in the place of Greek or Latin appellatives.

Owing to the inordinate use of pseudo-classical phraseology, the fascinating study of animal life has been too long considered as a profession or a science restricted to a favored few. So deeply rooted is this idea, that the popular notion of a scientific man is of one who possesses a fund of words, and not of one who has gathered a mass of ideas. There is really not the least reason why anyone of ordinary capabilities and moderate memory should not be acquainted with the general outlines of Zoology, when relieved of the cumbersome diction with which it is embarrassed.

The true object of Zoology is not, as some appear to fancy, to arrange, to number and to ticket animals in a formal inventory, but to make the study an inquiry into the Life-nature, and not only an investigation of the lifeless organism. I must not, however, be understood to disparage the outward form, thing of clay though it be. For what wondrous clay it is, and how marvellous the continuous miracle by which the dust of earth is transmuted into the glowing colors and graceful forms which we most imperfectly endeavor to preserve after the soul has departed therefrom. It is a great thing to be acquainted with the material framework of any creature, but it is a far greater to know something of the principle which gave animation to that structure. The former, indeed, is the consequence of the latter. The lion, for example, does not prey on animals because it possesses fangs, talons, strength and activity; on the contrary, it possesses these qualities because its inmost nature is to prey, and it needs these appliances to enable it to carry out the innate principle of its being; so that the truest description of the lion is that which treats of the animating spirit, and not only of the outward form. In accordance with this principle, it has been my endeavor to make the work rather anecdotal and vital than merely anatomical and scientific.

What do we know of Man from the dissecting room? Of Man, the warrior, the statesman, the poet or the saint? In the lifeless corpse there are no records of the burning thoughts, the hopes, loves and fears that once animated that now passive form, and which constituted the very essence of the being. Every nerve, fibre and particle in the dead bodies of the king and the beggar, the poet and the boor, the saint and the sensualist, may be separately traced, and anatomically they shall all be alike, for neither of the individuals is there, and on the dissecting table lies only the cast-off attire that the spirit no longer needs. The zoologist will never comprehend the nature of any creature by the most careful investigation of its interior structure or the closest inspection of its stuffed skin, for the material structure tells little of the vital nature, and the stuffed skin is but the lay figure stiffly fitted with its own cast coat.

The true study of Zoology is of more importance than is generally conceived, for although "the proper study of mankind is Man," it is impossible for us to comprehend the loftiness and grandeur of humanity, or even its individual and physical nature, without possessing some knowledge of the earlier forms of God's animated organizations. We must follow the order of creation, and as far as our perceptions will permit, begin where the Creator began. We shall then find that no animal leads an isolated existence, for the minutest atom of animated life which God has enfranchised with an individual existence, forms, though independent in itself, an integral and necessary portion of His ever-changing yet eternal organic universe. Hence every being which draws the breath of life forms a part of one universal family, bound together by the ties of a common creaturehood. And as being ourselves members of that living and breathing family, we learn to view with clearer eyes and more reverent hearts those beings which, although less Godlike than ourselves in their physical or moral natures, demand for that very reason our kindliest sympathies and most indulgent care. For we, being made in the image of God, are to them the visible representations of that Divine Being who gave the Sabbath alike for man and beast, and who takes even the sparrows under His personal protection.

NOTICE.

As a basis for this new issue we selected the original text of the Rev. Dr. Wood's Work on Natural History, well known as the most fascinating collection of description and anecdote ever published. The editor, Dr. Joseph B. Holder, in making the revision confined it to the abridgment of descriptive matter relating to such European animals as are also represented in a modified form in this country, and amplified Dr. Wood's text descriptive of the American variety. Where the latter are treated, the latest information is added in full and the classification and nomenclature now most approved is adopted.

The classification adopted for the American subjects, is as follows:—

For the Mammals, Prof. Flower, of London Zoological Society; for Birds, Robert Ridgway; Nomenclature of Birds of North America, Smithsonian Publication. Works of Dr. Coues and Baird, Brewer and Ridgway have been freely utilized.

For Fishes and Reptiles, the works of Jordan and Gilbert have proved of great service, well-nigh indispensable.

The Invertebrate Animals having during the last ten years received especial attention from officers of the U. S. Fish Commission, we have availed ourselves of their valuable publications and Yearly Reports. The immense amount of original work done by Prof. Verrill and his assistants in the Commission and the exceptional opportunities for such work accorded naturalists by the courtesy of Prof. Baird, Chief of the Commission, are highly appreciated.

For the very liberal use made of the above-mentioned works, the publisher of this edition would express his grateful acknowledgments.

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INTRODUCTION.

IN order to understand any science rightly, it needs that the student should proceed to its contemplation in an orderly manner, arranging in his mind the various portions of which it is composed, and endeavoring, as far as possible, to follow that classification which best accords with nature. The result of any infringement of this rule is always a confusion of ideas, which is sure to lead to misapprehension. So, in the study of living beings, it is necessary to adhere to some determinate order, or the mind becomes bewildered among the countless myriads of living creatures that fill earth, air, and water.

That some determinate order exists is evident to any thinking mind, but the discovery of the principle on which this order is founded is a problem that as yet has received but a partial solution. We already know some of the links of that wondrous chain that connects Man with the microscopic animalcule, but the one plan on which the Animal Kingdom is formed, has yet to be made known.

It is impossible to contemplate the vast mass of animal life without the conviction that the most supreme harmony has been observed in their creation, and the most perfect order exists in their connection one with the other. Whatever may be the key to this enigma,—and it is of a certainty a very simple one, possibly eluding us from its very simplicity—from the days of Aristotle to the present time zoologists have been diligently seeking for the true system of animated nature; and until that auspicious discovery be achieved, we must be content with making as near an approximation as possible.

As a general arranges his army into its greater divisions, and each division into regiments and companies, so does the naturalist separate the host of living beings into greater and smaller groups. The present state of zoological science gives five as the number of divisions of which the animal kingdom is composed, the highest of which is that in which Man himself is, by some, placed. These are called Vertebrates, Molluscs, Articulates, Radiates, and Protozoa. Of each of these divisions a slight description will be given, and each will be considered more at length in its own place.

1st. The VERTEBRATES include Man and all the Mammalia, the Birds, the Reptiles, and the Fish.

The term Vertebrate is applied to them because they are furnished with a succession of bones called "vertebræ," running along the body and forming a support and protection to the nervous cord that connects the body with the brain by means of numerous branches. The Vertebrates, with one or two known exceptions, have red blood and a muscular heart.

2d. The MOLLUSCA, or soft-bodied animals, include the Cuttle-fish, the Snails, Slugs, Mussels, &c. Some of them possess shells, while others are entirely destitute of such defence. Their nervous system is arranged on a different plan from that of the Vertebrates. They have no definite brain, and no real spinal cord, but their nerves issue from certain masses of nervous substance technically called ganglia.

3d. The ARTICULATES, or jointed animals, form an enormously large division, comprising the Crustaceans, such as the Crabs and Lobsters, the Insects, Spiders, Worms, and very many creatures so different from each other, that it is scarcely possible to find any common characteristics. It is among these lower animals that the want of a true classification is most severely felt, and the present arrangement can only be considered as provisional.

4th. The next division, that of the RADIATED animals, is so named on account of the

radiated or star-like form of the body, so well exhibited in the Star-fishes and the Sea-anemones. Their nervous system is very obscure, and in many instances so slight as to baffle even the microscope. Many of the Radiates possess the faculty of giving out a phosphorescent light, and it is to these animals that the well-known luminosity of the sea is chiefly owing.

5th. The PROTOZOA, or primitive animals, are, as far as we know, devoid of internal organs or external limbs, and in many of them the signs of life are so feeble, that they can scarcely be distinguished from vegetable germs. The Sponges and Infusorial Animalcules are familiar examples of this division.

VERTEBRATES.

The term Vertebrate is derived from the Latin word *vertere*, signifying to turn; and the various bones that are gathered round and defend the spinal cord are named vertebræ, because they are capable of being moved upon each other in order to permit the animal to flex its body. Were the spinal cord to be defended by one long bone, the result would be that the entire trunk of the animal would be stiff, graceless, and exceedingly liable to injury from any sudden shock. In order, therefore, to give the body latitude of motion, and at the same time to afford effectual protection to the delicate nerve-cord, on which the welfare of the entire structure depends, the bony spine is composed of a series of distinct pieces, varying in form and number according to the species of animal, each being affixed to its neighbor in such a manner as to permit the movement of one upon the other. The methods by which these vertebræ are connected with each other vary according to the amount of flexibility required by the animal of which they form a part. For example, the heavy elephant would find himself prostrate on the ground if his spine were composed of vertebræ as flexible as those of the snakes; while the snake, if its spine were stiff as that of the elephant, would be unable to move from the spot where it happened to lie. But in all animals there is some power of movement in the spinal column, although in many creatures it is very trifling.

Anatomy shows us that, in point of fact, the essential skeleton is composed of vertebræ, and that even the head is formed by the development of these wonderful bones. The limbs can but be considered as appendages, and in many Vertebrated animals, such as the common snake of our fields, the lamprey, and others, there are no true limbs at all.

The perfect VERTEBRA consists of three principal portions. Firstly, there is a solid, bony mass, called the centre, which is the basis of the whole vertebra. From this centre springs an arch of bone, through which runs the spinal cord, and directly opposite to this arch a second arch springs, forming the guardian of the chief blood-vessel of the body. Each arch is called by a name significative of its use; those through which the spinal cord runs being termed the neural, or nerve arch, and that for the passage of the blood-vessel is named the hæmal, or blood arch. There are other portions of the vertebræ which are developed into the bones, called "processes," some of which we can feel by placing a hand on any part of the spine.

It will be seen that, strictly speaking, the vertebræ are not of so much importance in the animal as the spinal cord, of which the vertebræ are but guardians, and that the division should rather have been defined by the character of the nerve than by that of the bone which is built around it.

Indeed, wherever the chief nervous column lies, it seems to gather the bony particles, and to arrange them round itself as its clothing or armor. This may be seen in a very young chicken, if the egg in which it is formed is opened during the first few days of incubation.

The position of the spinal cord is always along the back in every Vertebrate animal. The insects, the lobster, and other invertebrate animals exhibit the principal nerve-cords running along the abdomen; the position, therefore, of the chief nervous cord settles the division to which the animal belongs. This rule is of great importance in classification, because in every group of animals there are some in whom the distinguishing characteristics are so slight that they hardly afford a real criterion by which to judge. In the lower divisions the number of

these enigmatical animals is very considerable, and even in the highest of all, namely, the Vertebrates, there are one or two individuals whose position is but dubious. The best known of these creatures is the Amphioxus, a small, transparent fish, not uncommon on sandy coasts. In this curious animal the vertebral column is composed of, or rather represented by, a jelly-like cord, on which the divisions of the vertebræ are indicated by very slight markings. The spinal cord lies on the upper surface of this gelatinous substance, and there is no distinct brain, the nervous cord simply terminating in a rounded extremity. The blood is unlike that of the generality of Vertebrate animals, being transparent like water, instead of bearing the red hue that is so characteristic of their blood. Neither is there any separate heart, the circulation seeming to be effected by the contraction of the arteries.

On account of these very great divergencies from the usual vertebrate characteristics, its claim to be numbered among the Vertebrates appears to be a very hopeless one. But the spinal cord is found to run along the *back* of the creature, and this one fact settles its position in the Animal Kingdom.

It must be remembered that the Amphioxus is to be considered an exceptional being, and that when the anatomy of Vertebrate animals is described, the words "with the exception of the Amphioxus" must be supplied by the reader. The character of the nerves, bones, blood, and other structures, will be shown, in the course of the work, in connection with the various animals of which they form a part.

MAMMALIA.

The Vertebrated animals fall naturally into four great classes, which are so clearly marked that, with the exception of a few singularly constructed creatures, such as the Lepidosiren, or Mud-fish of the Gambia, any vertebrate animal can be without difficulty referred to its proper class. These four classes are termed MAMMALS, BIRDS, REPTILES, and FISHES,—their precedence in order being determined by the greater or less development of their structure.

Mammals, or Mammalia, as they are called more scientifically, comprise Man, the Monkey tribes, the Bats, the Dogs and Cats, all the hoofed animals, the Whales and their allies, and other animals, amounting in number to some two thousand species, the last on the list being the Sloth. The name by which they are distinguished is derived from the Latin word *mamma*, a breast, and is given to them because all the species belonging to this class are furnished with a set of organs, called the MAMMARY GLANDS, secreting the liquid known as milk, by which the young are nourished.

The number of the mammæ varies much, as does their position. Many animals that produce only one, or at the most two, young at the same birth, have but two mammæ, such as the monkey, the elephant, and others; while some,—such as the cat, the dog, and the swine,—are furnished with a sufficient number of these organs to afford sustenance to their numerous progeny. Sometimes the mammæ are placed on the breast, as in the monkey tribe; sometimes by the hind legs, as in the cow and the horse; and sometimes, as in the swine, along the abdomen.

The glands that supply the mammæ with milk lie under the skin, and by the microscope are easily resolvable into their component parts. Great numbers of tiny cells, or cellules, as they are named, are grouped together in little masses, something like bunches of minute grapes, and by means of very small tubes pour their secretions into vessels of a larger size. As the various tube-branches join each other they become larger, until they unite in five or six principal vessels, which are so constructed as to be capable of enlargement according to the amount of liquid which they are called upon to hold. In some animals, such as the cow, these reservoirs are extremely large, being capable of containing at least a quart of milk. The reservoirs are much smaller towards the mamma itself, and serve as tubes for the conveyance of the milk into the mouth of the young. Of the milk itself we shall speak in another part of the work.

The BLOOD of the Vertebrate animals is of a light red color when freshly drawn from the arteries. This wondrous fluid, in which is hidden the life principle that animates the being, is of a most complex structure, as may be imagined when it is remembered that all the parts of

the body are formed from the blood; and therefore to give a full description of that fluid would occupy more space than can be afforded to one subject. It is, however, so important a substance that it demands some notice.

When it is freshly drawn, the blood appears to be of a uniform consistence, but if poured into a vessel and suffered to remain undisturbed it soon begins to change its aspect. A comparatively solid and curd-like mass, of a deep red color, rises to the surface, and there forms a kind of cake, while the liquid on which it floats is limpid and almost colorless. The solid mass is called the clot, and the liquid is known by the name of serum. The whole time consumed in this curious process is about twenty minutes. While thus coagulating the blood gives out a peculiar odor, which, although far from powerful, can be perceived at some distance, and to many persons is inexpressibly revolting.

The upper part of the clot is covered with a thick film of an elastic and tenacious nature, which can be washed free from the red coloring substance, and then appears of a yellowish white tint. It can be drawn out and spread between the fingers, as if it were an organic membrane; and, as its particles arrange themselves into fibres, the substance is called fibrin. When a portion of fibrin is drawn out until it is much lengthened, the fibres are seen crossing each other in all directions, sometimes forming themselves into regular lines.

The red mass, which remains after the fibrin and serum have been removed, is almost wholly composed of myriads of small rounded bodies, called corpuscules, which can be readily seen by spreading a drop of blood very thinly on glass, and examining it with a microscope. Some of the disc-like corpuscules are seen scattered about, while others have run together and adhered by their flat sides, until they look somewhat like rouleaux of coin. There is sufficient distinction between the blood corpuscules of the various Mammalia to indicate to a practised eye the kind of animal from which they were taken; while the blood of the four great divisions of the Vertebrates is so strongly marked, that a casual glance will detect the ownership of the object under the microscope. The blood corpuscules of the Mammalia are circular, while those of the other three divisions are more or less elliptical.

That the blood contains within itself the various substances of which the body is composed, is evident to the intellect, although as yet no investigator has discovered the mode of its operation.

How the blood corpuscules are generated from the vegetable and animal substances taken into the stomach, we know not; but we do know that each globule possesses life, passing through its regular stages of birth, development, age, and death. When yet in their first stages of existence, the blood corpuscules are colorless, not taking the well-known ruddy tint until they have attained their full development. The living current that passes through our bodies is truly a fathomless ocean of wonders! Even the material formation of this fluid is beyond our present sight, which cannot penetrate through the veil which conceals its mysteries. Much less can we explain the connection of the blood with the mind, or know how it is that one thought will send the blood coursing through the frame with furious speed, crimsoning the face with hot blushes; or another cause the vital fluid to recoil to the heart, leaving the countenance pallid, the eyes vacant, and the limbs cold and powerless, as if the very life had departed from the body.

Not without reason do the earlier Scriptures speak so reverently of the blood, accepting the outpoured life of beasts as an atonement for the sin, and witness of the penitence of man, and forbid its use for any less sacred office. Nor was it without a still mightier meaning that the later Scriptures endue the blood with a sacramental sense, giving even to its vegetable symbol, the blood of the grape, a dignity greater than that of the former sacrifices.

A few words must also be given to the mode by which the blood is kept continually running its appointed course through the animal frame. This process, commonly called CIRCULATION, takes place in the following manner, Man being an example:—

In the centre of the breast lies the heart, an organ composed of four chambers, the two upper being termed auricles, and the two lower being distinguished by the title of ventricles. These are only conventional terms, and do not express the office of the parts. The auricles are

comparatively slight in structure, but the ventricles are extremely powerful, and contract with great force, by means of a curiously spiral arrangement of the muscular fibres. These latter chambers are used for the purpose of propelling the blood through the body, while the auricles serve to receive the blood from the vessels, and to throw it into the ventricles when they are ready for it.

By the systematic expansion and contraction of the heart-chambers, the blood is sent on its mission to all parts of the body, through vessels named arteries, gradually diminishing in diameter as they send forth their branches, until they terminate in branchlets scarcely so large as hairs, and which are therefore called "capillaries," from the Latin word *capillus*, a hair.

In the capillaries the blood corpuscules would end their course, were they not met and welcomed by a second set of capillaries. These vessels take up the wearied and weakened globules, carrying them off to the right-hand chambers of the heart, whence they are impelled through a vessel known by the name of the "pulmonary artery," to be refreshed by the air which is supplied to them in the beautiful structure known as the lungs. Meeting there with new vitality—if it may so be called—the blood corpuscules throw off some of their effete portions, and so, brightened and strengthened, are again sent through the arteries from the heart to run their round of existence, and again to be returned to the heart through the veins.

It is indeed a marvellous system, this constant circular movement, that seems to be inherent in the universe at large, as well as in the minute forms that inhabit a single orb. The planets roll through their appointed courses in the macrocosmal universe, as the blood globules through the veins of the microcosm, man: each has its individual life, while it is inseparably connected with its fellow-orbs, performing a special and yet a collective work in the vast body to which it belongs; darkening and brightening in its alternate night and day until it has completed its career.

In order to prevent other organs from pressing on the heart, and so preventing it from playing freely, a membranous envelope, called from its office the "pericardium," surrounds the heart and guards it.

The various operations which are simultaneously conducted in our animal frame are so closely connected with each other that it is impossible to describe one of them without trenching upon the others. Thus, the system of the circulatory movement, by which the blood passes through the body, is intimately connected with the system of RESPIRATION, by which the blood is restored to the vigor needful for its many duties.

In order to renew the worn-out blood, there must be some mode of carrying off its effete particles, and of supplying the waste with fresh nourishment. For this purpose the air must be brought into connection with the blood without permitting its escape from the vessels in which it is confined. The mode by which this object is attained, in the Mammalia, is briefly as follows:—

A large tube, appropriately and popularly called the "windpipe," leads from the back of the mouth and nostrils into the interior of the breast. Just as it enters the chest it divides into two large branches, each of which subdivides into innumerable smaller branchlets, thus forming two large masses, or lobes. In these lobes, or lungs, as they are called, the air-bearing tubes become exceedingly small, until at last they are but capillaries which convey air instead of blood, each tube terminating in a minute cell. The diameter of these cells is very small, the average being about the hundred and fiftieth of an inch. Among these air-bearing capillaries the blood-bearing capillaries are so intermingled that the air and blood are separated from each other only by membranes so delicate that the comparatively coarse substance of the blood cannot pass through, although the more ethereal gases can do so. So, by the presence of the air, the blood is renewed in vigor, and returns to its bright florid red, which had been lost in its course through the body, while the useless parts are rejected, and gathered into the air-tubes, from whence they are expelled by the breath.

The heart is placed between the two lobes of the lungs, and is in a manner embraced by them. The lungs themselves are enclosed in a delicate membrane called the "pleura." These

two great vital organs are situated in the breast, and separated from the digestive and other systems by a partition, which is scientifically known by the name of "diaphragm," and in popular language by the term "midriff." This structure does not exist in the Birds; and its presence, together with that of the freely-suspended lungs, is an unfailing characteristic of the Mammalian animal.

Thus the entire structure bears the closest resemblance to a tree, growing with its root upwards and its leaves downward,—the trachea being the trunk, the branchial tubes the limbs, the smaller tubes are the branches, and the air-cells the leaves. A similar idea runs through the nerve system and that of the blood; all three being interwoven with each other in a manner most marvellous and beautiful.

The ORGANS OF NUTRITION occupy the greater part of the space between the diaphragm and the lower limbs, and are composed of the following parts. The mouth receives and, in most cases, grinds the food until it is sufficiently soft to be passed onwards into the general receptacle, called the stomach. Here begins the process of digestion, which is chiefly carried on by means of a liquid called the gastric juice, which is secreted by glands within the stomach, and dissolves the food until it is of a uniform soft consistency. In this state the food is called "chyme," and passes from the stomach into a tube called the "duodenum." Here the chyme begins to separate into two portions; one, an indigestible and useless mass, and the other, a creamy kind of liquid, called "chyle." The former of these substances is propelled through the long and variously-formed tube, called the intestinal canal, and rejected at its outlet; while the chyle is taken up by numerous vessels that accompany the intestines, and is finally thrown into one of the large veins close by the heart, and there mixes with the blood.

There is another curious system called the "lymphatic," on account of the limpid appearance of the liquid which is conveyed through the lymphatic vessels. These are analogous to the lacteals, but instead of belonging to the intestines, they are spread over the whole frame, being thickly arranged just under the skin. They are curiously shaped, being studded with small knotty masses, and fitted with valves which keep the contained liquid in its proper course. Both the lacteal and lymphatic vessels pour their contents into one large trunk, called from its position the thoracic duct. This vessel is about twenty inches in length, and when distended, is in its widest part as large as a common lead pencil.

All these wonderful forms and organs would, however, be but senseless masses of matter, differing from each other by the arrangement of their component parts, but otherwise dead and useless. It needs that the being which is enshrined in this bodily form (whether it be man or beast) should be able to move the frame at will, and to receive sensations from the outer world.

More than this. As all vertebrated animals are forced at short intervals to yield their wearied bodies to repose, and to sink their exhausted minds in the temporary oblivion of sleep, there must of necessity be a provision for carrying on the vital functions without the active co-operation of the mind. Were it otherwise, the first slumber of every being would become its death sleep, and all the higher classes of animals would be extirpated in a few days. The mind would be always on the stretch to keep the heart to its constant and necessary work; to watch the play of the lungs in regenerating the blood; to aid the stomach in digesting the food, and the intestinal canal in sifting its contents; together with many other duties of a character quite as important.

Supposing such a state of things to be possible, and to be put in practice for one single hour, how terrible would be the result to humanity! We should at once degenerate into a mass of separate, selfish individuals, each thinking only of himself, and forced to give the whole of his intellectual powers to the one object of keeping the animal frame in motion. Society would vanish, arts cease from the face of the earth, and the whole occupation of man would be confined to living an isolated and almost vegetable life.

This being the case with man, the results to the lower portions of the animal kingdom would be still more terrible. For their intellect is infinitely below that of the dullest of the human race, and they would not even possess the knowledge that any active exertion would

be necessary to preserve their lives. And for all living beings the wandering of the mind but for a few seconds would cause instantaneous death.

All these difficulties are removed, and the animal kingdom preserved and vivified, by means of certain vital organs, known by the name of nerves.

It is clear enough that mind does not act directly upon the muscles and the various organs of the material body, but requires a third and intermediate substance, by which it is enabled to convey its mandates and to receive information. The necessarily multitudinous channels through which this substance is conveyed are called "nerves," and are of a consistency more delicate than that of any other portions of the animal frame. There is a rather striking and close analogy between the mode in which the three systems of mind, nerve, and muscle act together, and the working of a steam-engine. In the engine we may take the fire as the analogue of the mind ; the water, of the nervous substance—the water-tubes representing the nerves ; and the iron and brass machine as the representative of the bone and muscle. Thus we may make as large a fire as we like, heap on coals, and urge a fierce draught of air through the furnace, until the grate is filled with a mass of glowing white-hot matter. But the fire cannot act on the wheels without the intermediate substance, the water. This medium being supplied, the fire acts on the water, and the water on the metallic bars and wheels, so that the three become one harmonious whole.

Towards the great nerve mass, called by the name of "brain," tend the nerve-cords that supply the body with vital energy. It seems to be the nerve-heart, so to speak. From the brain, a cord of nervous matter, called the "spinal cord," runs along the back, under the guardianship of the vertebræ, continually giving off branches of various sizes, according to the work which they have to fulfil. These branches ramify into smaller twigs, subdividing until they become so small that they almost even baffle the microscope. A familiar proof may be given of the wonderfully minute subdivision of the nerves, by trying to probe the skin with the point of a fine needle, and to discover any spot so small that the needle-point does not meet with a nerve.

The cause of the peculiarly delicate sensibility of the finger tips is readily understood if we take into account the mode in which the nerve-loops are distributed. The object is greatly magnified, the two ridges being the enlarged representations of the minute raised lines which appear on the tips of the fingers and thumbs.

That the nerves all find their way to the brain and issue from thence, is plainly shown by the well-known fact that if the spinal cord be injured all sensation ceases in the parts of the body that lie below the injury. And it is possible to deprive any limb of sensation by dividing the chief nerve that supplies that member with nerve-fibres.

There seem to be two sets of nerves for the two purposes of conveying motive-power to the body and of bringing to the nervous centres the sensations of pain or pleasure felt by any part of the body. These are appropriately known as nerves of motion and nerves of sensation.

Connected with these nerves is a second system of a very curious nature, known by the name of the "sympathetic nerve." The greater portion of the sympathetic nerve in the human frame "communicates with the other nerves immediately at their exit from the cranium and vertebral canal. It is called the ganglionic nerve, from being constituted of a number of ganglia, and from the constant disposition which it evinces in its distribution to communicate and form small knots of ganglia." * It is wonderfully interwoven with the vital organs, and from this disposition it is sometimes termed the "organic nerve." Its functions are closely connected with the phenomena of organic life, and it seems to be especially sensitive to emotional disturbances. There are several aggregations of the ganglia in various portions of the body ; the largest, which is known by the name of the "solar plexus," is placed in the pit of the stomach or "epigastrium." Its importance may be easily inferred from the extreme agony that is caused by the slightest blow near the region of that group of ganglia. A concussion that would hardly be felt upon any other portion of the body, will, if it takes place on the epigastrium, at once cause the injured person to fall as if shot, bring on collapse, deprive

* Wilson.

him of breath for some time, and leave him gasping and speechless on the ground; while a tolerably severe blow in that region causes instantaneous death.

Anxiety seems to fix its gnawing teeth chiefly in the solar plexus, causing indigestion and many other similar maladies, and deranging the system so thoroughly that even after the exciting cause is removed the effects are painfully evident for many a sad year.

By means of this complicated system of nerves the entire body, with its vital organs, is permeated in every part by the animating power that gives vitality and energy to the frame so long as the spirit abides therein.

This is the portion of the nervous system that never slumbers nor sleeps, knowing no rest, and never ceasing from its labors until the time comes when the spirit finally withdraws from the material temple in which it has been enshrined. It is the very citadel of the nerve forces, and is the last stronghold that yields to the conquering powers of death and decay.

Thus it will be seen that each animal is a complex of many animals, interwoven with each other, and mutually aiding each other. In the human body there is, for example, the nerve-man, which has just been described; there is a blood-man, which, if separated from the other part of the body, is found to present a human form, perfect in proportions, and composed of large trunk-vessels, dividing into smaller branches, until they terminate in their capillaries. A rough preparation of the blood-being may be made by filling the vessels with wax, and dissolving away the remaining substances, thus leaving a waxen model of the arteries and veins with their larger capillaries.

Again, there is the fibrous and muscular man, composed of forms more massive and solid than those which we have already examined.

Lastly, there is the bone-man, which is the least developed of the human images, and which, when stripped of the softer coverings, stands dense, dry, and lifeless;—the grim scaffolding of the human edifice. Although the bones are not in themselves very pleasing objects, yet their mode of arrangement, their adaptation to the wants of the animal whose frame they support, and the beautiful mechanism of their construction, as revealed by the microscope, give a spirit and a life, even to the study of dry bones.

The larger hollows are caused by the minute blood-vessels which penetrate the bone throughout its substance, and serve to deposit new particles, and to remove those whose work is over. They are, in fact, a kind of lungs of the bones, through which the osseous system is regenerated in a manner analogous to the respiration which regenerates the blood. In order to supply a sufficient volume of blood to these various vessels, several trunk vessels enter the bones at different parts of their form, and ramify out into innumerable branchlets, which again separate into the hair-like vessels that pass through the above-mentioned canals. These are termed, from their discoverer, C. Havers, the Haversian canals, and their shape and comparative size are most important in determining the class of beings which furnished the portion of bone under examination.

In the human bone these canals run so uniformly, that their cut diameters always afford a roundish outline. But in the bird-bone, the Haversian canals frequently turn off abruptly from their course, and running for a short distance at right angles, again dip and resume their former direction.

The reptiles possess very few Haversian canals, which, when they exist, are extremely large, and devoid of that beautiful regularity which is so conspicuous in the mammalia, and to a degree in the birds.

The fish-bone is often totally destitute of these canals, while, in other cases, the bone is thickly pierced with them, and exhibits also a number of minute tubes, white and delicate, as if made of ivory.

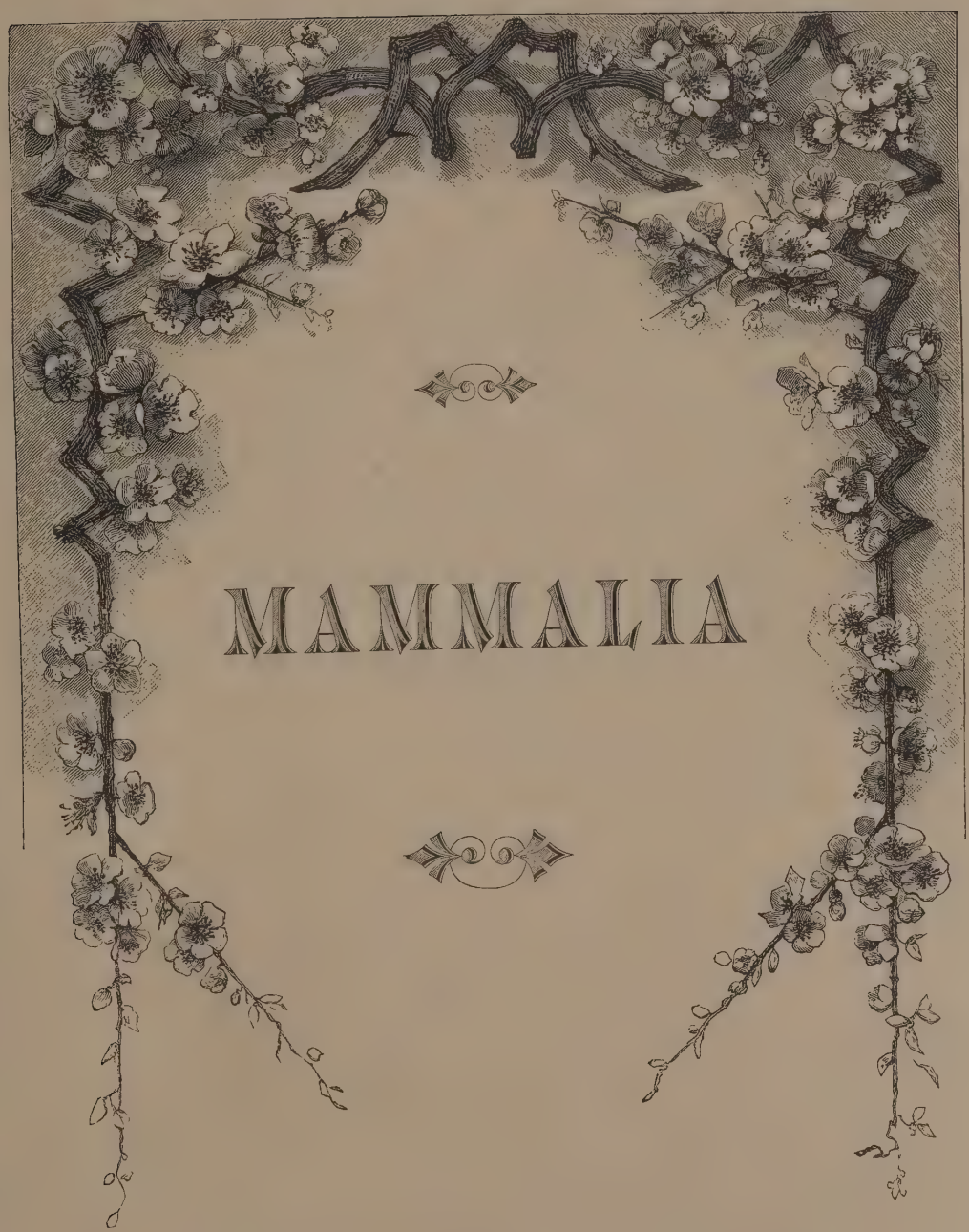
Returning to the human bone, the Haversian canals are seen to be surrounded with a number of concentric bony rings, varying much in number and shape, on which are placed sundry little black objects that somewhat resemble ants or similar insects. These latter objects are known by the name of bone-cells; and the little dark lines that radiate from them are the indications of very minute tubes, the number and comparative dimensions of which are extremely various in different animals.

Thus, it will be seen, how easily the observer can, in a minute fragment of bone, though hardly larger than a midge's wing, read the class of animal of whose framework it once formed a part, as decisively as if the former owner were present to claim his property; for each particle of every animal is imbued with the nature of the whole being. The life-character is enshrined in and written upon every sanguine disc that rolls through the veins; is manifested in every fibre and nervelet that gives energy and force to the breathing and active body; and is stereotyped upon each bony atom that forms part of its skeleton framework.

Whoever reads these hieroglyphs rightly is truly a poet and a prophet; for to him the "valley of dry bones" becomes a vision of death passed away, and a prevision of a resurrection and a life to come. As he gazes upon the vast multitude of dead, sapless memorials of beings long since perished, "there is a shaking, and the bones come together" once again; their fleshly clothing is restored to them; the vital fluid courses through their bodies; the spirit of life is breathed into them; "and they live, and stand upon their feet." Ages upon ages roll back their tides, and once more the vast reptile epoch reigns on earth. The huge saurians shake the ground with their heavy tread, wallow in the slimy ooze, or glide sinuous through the waters; while winged reptiles flap their course through the miasmatic vapors that hang dank and heavy over the marshy world. As with them, so with us,—an inevitable progression towards higher stages of existence, the effete and undeveloped beings passing away to make room for new, and loftier, and more perfect creations. What is the volume that has thus recorded the chronicles of an age so long past, and prophecies of as far distant a future? Simply a little fragment of mouldering bone, tossed aside contemptuously by the careless laborer as miners' "rubbish."

Not only is the past history of each being written in every particle of which its material frame is constructed, but the past records of the universe to which it belongs, and a prediction of its future. God can make no one thing that is not universal in its teachings, if we would only be so taught; if not, the fault is with the pupils, not with the Teacher. He writes his ever-living words in all the works of his hand; He spreads this ample book before us, always ready to teach, if we will only learn. We walk in the midst of miracles with closed eyes and stopped ears, dazzled and bewildered with the Light, fearful and distrustful of the Word!

It is not enough to accumulate facts as misers gather coins, and then to put them away on our bookshelves, guarded by the bars and bolts of technical phraseology. As coins, the facts must be circulated, and given to the public for their use. It is no matter of wonder that the generality of readers recoil from works on the natural sciences, and look upon them as mere collections of tedious names, irksome to read, unmanageable of utterance, and impossible to remember. Our scientific libraries are filled with facts, dead, hard, dry, and material as the fossil bones that fill the sealed and caverned libraries of the past. But true science will breathe life into that dead mass, and fill the study of zoology with poetry and spirit.


MAMMALIA

OUR LIVING WORLD.

QUADRUMANA;

OR, THE MONKEY TRIBE.

THE QUADRUMANOUS, or Four-handed animals, are familiarly known by the titles of Apes, Baboons, and Monkeys. There is another family of Quadrumana, called Lemurs, which bear but little external resemblance to their more man-like relations, are comparatively little known, and have even been popularly termed "rats," "cats," or "dogs," by travellers who have come in contact with them.

Although these animals are capable of assuming a partially erect position, yet their habitual attitude is on all fours, like the generality of the mammalia. Even the most accomplished ape is but a bad walker when he discards the use of his two upper limbs, and trusts for support and progression to the hinder legs only. There are many dogs which can walk, after the biped manner, with a firmer step and a more assured demeanor than the apes, although they do not so closely resemble the human figure.

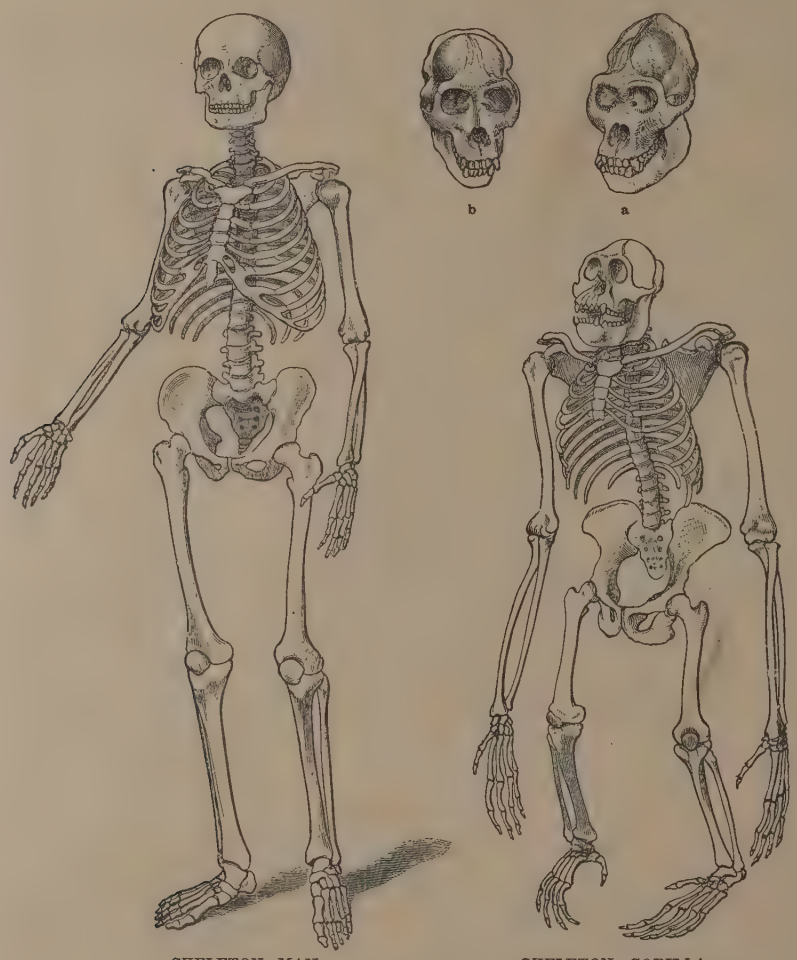
However carefully a monkey may be educated, yet it never can assume an attitude truly erect, like that of man. The construction of its whole frame is such, that its knees are always bent more or less, so that a firm and steady step is rendered impossible. When in the enjoyment of liberty among their native haunts, none of the monkey tribes seem to use their hind legs exclusively for walking, although they often raise themselves in a manner similar to that of the bears, and other animals, when they wish to take a more extended view of the surrounding localities.

On account of the structure of the limbs, the term "hand" is given to their extremities; but hardly with perfect fitness. It must be borne in mind that the thumb is not invariably found on the fore extremities of these animals. In several genera of the monkeys, the fore-paws are destitute of effective thumbs, and the hand-like grasp is limited to the hinder feet. The so-called hands of the monkey tribes will not bear comparison with those of man. Although the thumb possesses great freedom of motion, and in many species can be opposed to the fingers in a manner resembling the hand of man, yet there is no intellectual power in the monkey hand; none of that characteristic contour which speaks of the glorious human soul so strongly, that an artist can sketch a single hand, and in that one member exhibit the individuality of its owner! The monkey's "hand" is a *paw*—a thieving, crafty, slinking paw, and not a true hand. So is his foot but a paw, and not a true foot, formed for grasping and not for walking. Man seems to be the only earthly being that possesses true feet and hands. Some animals patter along upon their paws, some trot and gallop upon hoofs, others propel themselves with paddles, but Man alone can walk. Man is never so much Man as when erect, whether standing or walking. It is no mere figure of speech to say that man walks with God.

In order to bring this point more clearly before the eyes of the reader, the skeleton of a man is contrasted with that of the gorilla, the most highly organized of all the apes. The heavy, ill-balanced form of the ape; its head sunk upon its shoulders; its long, uncouth arms,

with those enormous paws at their extremities; its short, bowed, and tottering legs, unable to support the huge body without the help of the arms; the massive jaw-bones and protruding face, put the creature at an unappreciable distance from humanity, even though it is represented in an attitude as similar to that of the human being as the organization of the bones will permit. Any one who could fancy himself to be descended, however remotely, from such a being, is welcome to his ancestry.

Contrast with the skeleton of the gorilla, that of man. Light in structure, and perfectly balanced on the small and delicate feet; the slender arms, with their characteristic hands; the smooth and rounded skull; the small jaw-bones and regular teeth, all show themselves as the framework of a being whose strength is to lie in his intellect, and not in the mere brute power of bone and muscle. There seems to be a strange eloquence in *form*, which speaks at once to the heart in language that can only be felt, and is beyond the power of analysis to resolve. Thus, the contrasted shapes of these two frames speak more forcibly of the immeasurable distance between the two beings of which they form a part, than could be expressed in many pages of careful description. Strength for strength, the ape is many times the man's superior, and could rend him to pieces in single combat. But that slender human frame can be so intellectually strengthened, that a single man could destroy a troop of apes, if he so desired, and without offering them the possibility of resistance.



SKELETON—MAN. SKELETON—GORILLA.

One great cause of the awkward bipedal walk of the monkey tribes, is the position of the orifice in the skull, through which the spinal cord enters the brain. In the human skull this orifice is so placed that the head is nearly equally balanced, and a considerable portion of the skull projects behind it; but in the lower animals, this orifice—called the "occipital foramen"—is set so far back, that the whole weight of the brain and skull is thrown forwards, and so overbalances the body.

Another cause is seen in the structure of the hind limbs These members are intended for progression among the branches of trees, and are so formed that, when the animal uses them for terrestrial locomotion, it is forced to tread, not upon their soles, but upon their sides. The muscular calves, which brace the foot and limb, are wanting in the Quadrumanous animals; and even when they are standing as uprightly as possible, the knees are always

partially bent. The monkeys, then, are just quadrupeds, although their paws are more perfectly developed than those of the generality of animals.

We will now proceed to our examples of the Quadrumanous animals.

SIMIADÆ, OR APES.

The Apes are at once distinguished from the other Quadrumana by the absence of those cheek-pouches which are so usefully employed as temporary larders by those monkeys which possess them; by the total want of tails, and of those callosities on the hinder quarters which are so conspicuously characteristic of the baboons. Besides these external differences there are several distinctions to be found in the interior anatomy both of the bones and the vital organs.

The first in order, as well as the largest of the Apes, is the enormous ape from Western Africa, the Gorilla, the skeleton of which has already been given. This animal is comparatively new to modern zoologists, and very little is at present known of its habits. The first modern writer who brought the Gorilla before the notice of the public, seems to be Mr. Bowdich, the well-known African traveller; for it is evidently of the Gorilla that he speaks under the name of Ingheena. The natives of the Gaboon and its vicinity use the name Gina, when mentioning the Gorilla. The many tales, too, that are told of the habits, the gigantic strength, and the general appearance of the Ingheena, are precisely those which are attributed to the Gorilla.

Of the Ingheena, Mrs. Lee (formerly Mrs. Bowdich) speaks as follows:—"It is in equatorial Africa that the most powerful of all the Quadrumana live, far exceeding the orang-outan, and even the pongo of Borneo.

"Mr. Bowdich and myself were the first to revive and confirm a long-forgotten and vague report of the existence of such a creature, and many thought that, as we ourselves had not seen it, we had been deceived by the natives. They assured us that these huge creatures walk constantly on their hind feet, and never yet were taken alive; that they watch the actions of men, and imitate them as nearly as possible. Like the ivory hunters, they pick up the fallen tusks of elephants, but not knowing where to deposit them, they carry their burdens about until they themselves drop, and even die from fatigue; that they built huts nearly in the shape of those of men, but live on the outside; and that when one of their children dies, the mother carries it in her arms until it falls to pieces; that one blow of their paw will kill a man, and that nothing can exceed their ferocity."

Its existence was evidently known to some adventurous voyagers more than two thousand years ago, and a record has been preserved of these travels.

Somewhere about the year 350 B. C., the Carthaginians, then a most powerful and flourishing nation, organized a naval expedition for the purpose of examining the coasts and of founding colonies. The command of the fleet, which consisted of sixty large vessels containing nearly thirty thousand men and women, together with provisions and other necessaries, was entrusted to Hanno, who wrote memoirs of the voyage in a small work that is well known by the title of the "Periplus," or the Circumnavigation of Hanno. In the course of this voyage he founded seven colonies, and after advancing as far as the modern Sierra Leone, was forced to return for want of provisions.

The whole treatise is one of great interest, especially in the present day, when travels of discovery in Africa have been prosecuted with so much energy. The passage, however, which bears on the present question is briefly as follows. After narrating the meeting with these creatures on an island off the west coast of Africa, he proceeds to say:—"There were many more females than males, all equally covered with hair on all parts of the body. The interpreters called them GORILLAS. On pursuing them we could not succeed in taking a single male; they all escaped with astonishing swiftness, and threw stones at us; but we took three females, who defended themselves with so much violence that we were obliged to kill them, but we brought their skins stuffed with straw to Carthage." It is evident that Hanno (or

Annon, as his name is sometimes given) considered these Gorillas to be the veritable savage human inhabitants of the island; perhaps rather more savage and powerful than ordinary, and rather less given to clothing; which latter deficiency, however, was supplied by the natural covering of hair.

Imperfect as is his description, yet it is of much interest, as it proves the existence of extraordinarily huge apes hitherto unknown even to the Carthaginians, the stuffed skins being visible tests.

For two thousand years nothing was heard of the Gorilla except certain floating rumors of satyr-haunted woods, and of wild men who used to make their appearance at distant intervals and then to disappear; "of which kind," it is said, "there are still in Ethiopia." But by degrees the truthfulness of the narrative was made clear; detached bones were discovered and sent to Europe, and at last the complete animal made its appearance. Indeed, we are much indebted to this straightforward and simple-minded sailor, for his unadorned narrative, which forms such a favorable contrast to the travellers' tales of later voyagers, who on some small substratum of truth raised such enormous fictions as the monopods, the pigmies and cranes, the acephali, and other prodigies. For a vivid description, and graphic though rude figures of these and many other monsters, the reader is referred to the "Nuremberg Chronicle."

Perhaps it may be of this animal that the following history is narrated:—

"A certain ape after a shipwreck, swimming to land, was seen by a countryman, and thinking him to be a man in the water, gave him his hand to save him, yet in the meantime asked him what countryman he was, who answered he was an *Athenian*. 'Well,' said the man, 'dost thou know *Piræus?*' (which is a port in *Athens*).

"'Very well,' said the ape, 'and his wife, friends, and children;' whereat the man being moved, did what he could to drown him."

At present we have but a very slight acquaintance with the mode of life adopted by the Gorilla in a wild state, or even with its food. For a knowledge of the habits of animals is only to be gained by a long residence in their vicinity, and by careful watching. With some creatures this is an easy task, but there are some which are so wary, so active, and so fierce, that a close inspection is almost an impossibility. Among the worst of such objects is the Gorilla. In the first place, it is only to be found in the thickest jungles of the Gaboon, far from man and his habitations. Then, it is wary, as are all the apes, and is said to be so ferocious, that if it sees a man, it immediately attacks him, so that there would be little time for gaining any knowledge of the creature's domestic habits, and scarcely any likelihood of surviving to tell the result of the investigation.

To judge by the structure of the skeleton, and of the entire form, the strength of an adult male must be prodigious. The teeth are heavy and powerful, and the great canines or tusks are considerably more than an inch in their projection from the jaw. The jaw-bone, too, is enormously developed, and the strength of the muscles that move it, is indicated by the deep bony ridges that run over the top of the skull, and in different parts of the head. As is usual among such animals, the tusks of the male Gorilla are nearly double the size of those of the female ape.

Although the body is comparatively small, as are the hinder legs, yet the breadth of shoulder and length of arm are singularly great; while an ordinary human hand placed on that of the ape, dwindles down to insignificance before the huge muscular paw. The thumb of the hinder paws is enormously large, as is well shown in the engraving.

There is a treacherous and cruel aspect about this hind foot, with its enormous thumb; and if all tales be true, the foot belies not its character. The natives of the Gaboon country hold the Gorilla in great dread, fearing it even more than the lion itself, on account of its furtively murderous disposition.

Concealed among the thick branches of the forest trees, the Gorilla, itself unseen, watches the approach of the unsuspecting negro. Should he pass under the tree, woe betide him; for the Gorilla lets down its terrible hind foot, grasps its victim round the throat, lifts him from the earth, and finally drops him on the ground, dead.

Sheer malignity must prompt the animal to such a deed, for it cares not to eat the dead

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GORILLA.

man's flesh; but finds a fiendish gratification in the mere act of killing. It is a kind of sporting; though the game is of a better quality than that which is usually chased over the fields, shot in the air, or hooked out of the water; not to be eaten, but for the sport.

Such a deed as the capture of an adult Gorilla has never been attempted, and much less achieved, by the human inhabitants of the same land. There are many reasons for this circumstance.

Yet it does not follow that although the Africans have failed, Europeans should not succeed. The native Africans have not dared to attempt the capture of the elephant, although Europeans have succeeded in that endeavor, and have subdued the terrible foe, converting it into a docile servant, and even making it an attached and intelligent friend.

Once or twice, the young Gorillas have been captured, in spite of the furious resistance which is made by their male friends; but from some reason they have always died in a very short time.

Cunning as is the Gorilla, and ingenious in some things to a striking degree, its intelligence is but limited, and the animal exhibits such unexpected instances of fatuity, that it well shows the distinction between cunning and wisdom, and proves itself to be but an animal, and nothing more.

If it finds the remnant of a fire which has been relinquished by the persons who kindled it, the Gorilla is greatly charmed with the novel sensation produced by artificial warmth, and sits by the bright wonder with much satisfaction. As the fire fails, and the glowing brands sink into white ashes, the animal draws closer to the expiring embers, and does not leave them until all heat has left the spot. But it never thinks of keeping up the fire by placing fresh fuel upon it, and does not even learn to imitate that action, which it may often have seen performed by the hunters who kindled the fire, and kept it well supplied with fuel during the night. It is most providential that the beast is devoid of this faculty, for, with the usual perseverance of the monkey race in such cases, it would probably continue to heap fuel until the fórest itself was ablaze.

It is said also, that when the Gorilla makes an incursion into a sugar plantation, it has sufficient sense to bite off a number of the canes, and to twist them into a bundle for better conveyance. But it frequently includes several of the growing canes in its faggot, and then feels woefully discomfited because it cannot carry away the parcel which had cost so much trouble in making.

The natives of Africa have an idea that these, and other large apes, are really men; but that they pretend to be stupid and dumb, in order to escape impressment as slaves. Work, indeed, seems to be the *summum malum* in the African mind, and a true African never works if he can help it. As to the necessary household labors, and the task of agriculture, he will not raise a finger, but makes his wives work, he having previously purchased them for that purpose. In truth, in a land where the artificial wants are so few—unless the corruptions of pseudo-civilization have made their entrance—and where unassisted nature is so bountiful, there is small need of work. The daily life of a "black fellow" has been very graphically described in a few words. He gets a large melon; cuts it in two and scoops out the inside; one half he puts on his head, he sits in the other half, and eats the middle.

It is rather singular that this legendary connection of apes and indolence should prevail on the continents of Africa and Asia.

The outline of the Gorilla's face is most brutal in character, and entirely destroys the slight resemblance to the human countenance, which the full form exhibits. As in the Chimpanzee, an ape which is placed in the same genus with the Gorilla, the color of the hair is nearly black; but in some lights, and during the life of the animal, it assumes a lighter tinge of grayish brown, on account of the admixture of variously colored hairs. On the top of the head, and the side of the cheeks, it assumes a grizzly hue. The length of the hair is not very great, considering the size of the animal, and is not more than two or three inches in length. On the arms it is arranged in a rather curious manner, the hair from the shoulder to the elbow points downwards, while that from the elbow to the fingers points upwards, so that the two sets of hairs meet at the elbow, and make a pendent tuft. A similar structure is found

in other large apes, but the object of so curious a disposition is not yet known. One reason for this arrangement of the hair, may be that if their long hairs were to hang along the arm and wrist, they would get into the hand, and interfere with the grasp, while by their reverted growth such an embarrassment is removed. The color of the eye is dark brown, glowing with a baleful emerald light, when the fierce passions are roused.

It will be seen, on referring to the two engravings, which represent the skeleton of this animal, and the living creature itself, that the paws of the four extremities are not precisely alike in their development. On the two fore-paws, the fingers are enormous, the thumbs being comparatively trifling in dimensions; while the corresponding members of the hinder paws are just reversed in their size. The figure of the Gorilla, opposite, marks these peculiarities with great fidelity, and in the action of the creature shows the reason for the extraordinary and gigantic thumbs of the hinder limbs.

As to the size of a full grown Gorilla, accounts vary much. The specimen which is best known in England is five feet six inches high, when placed erect. From shoulder to shoulder it measures nearly three feet, while the body is only two feet four inches, measured from the hip-joint. It is possible, however, that there may be much larger individuals. Independent, however, of the impression made on the minds of the spectators by the sight of an infuriated animal, it is a fact that the feeling of anger does dilate the form, whether of man or beast. And as one effect of anger is to cause the hair to bristle up (as indeed is seen familiarly in dogs, cats, and other animals), the ape while under the influence of that fiery rage to which these animals are so subject, would in reality present a larger outline than if it were calmly engaged in its usual pursuits. Six, or even seven feet of height, have been attributed to these creatures. But it must be remembered that a wild, fierce animal always looks very much larger when living and in motion, than when lying dead and still on the ground, or even "set up" in a museum, with glass eyes, and straw-distended skin. Elephants of sixteen feet high, have shrunk to eleven and ten feet under the application of the measuring rod, and it is proverbial among anglers, that the fish which they do *not* catch, are finer and heavier than those which they can subject to scales and foot-measure. So it is likely enough, that a wild and savage Gorilla, with his fury-flashing eyes, his fierce gestures, and enormous arms, would impress the mind of his opponent with an idea of a very much larger animal. It is not only upon Gadshill that two men in buckram multiply unto eleven.

But granting that the Gorilla does not attain to any much greater height than five feet, even then it is an animal much to be dreaded as an enemy, and capable of doing vast mischief, if so inclined. But it is a most merciful provision, and one that seems to be universal among creatures of such a stamp, that in proportion as their bodily powers increase, their mental powers degenerate. The larger apes are, in their period of childhood, so to speak, teachable and tolerably docile; while when they attain to years of maturity, the animal attributes assume strength, gradually gain dominion over the mental, until at last the reasoning capacities seem to degenerate into a mere contracted cunning.

It seems that this degeneration is intended to prevent the animal from passing beyond the bounds to which it is confined, and by the very laws of its being to prevent it from using its vast strength for bad purposes. The ape evidently does not know his strength, nor how terrible an enemy he could be, if he only knew how to use the singular power and activity which he possesses. These huge apes seem to live apart from each other, and not to band together in large herds as do the baboons and other quadrumanous animals. If they were to unite, and to understand the principle of combination, they could speedily depopulate any country that was inhabited by men who were not possessed of fire-arms, and were unable to construct defences.

But, fortunately for those human beings who are within reach of these terrible animals, the adult ape is one of the most dull and stupid creatures imaginable; sulky, ferocious, and given solely to its own animal appetites.

Here is a sketch of one of the lowest and least developed of human beings, probably the very lowest of the human race. This little man, who belongs to the same country as the Gorilla, hardly attains even to the same stature, and in muscular proportions is a very pigmy.

GORILLA.

Yet that in mere animal form the Bushman is infinitely higher than the ape, is evident from the contrast displayed by the two figures; while, if the comparison be extended to the mental endowments, the impassable barrier that exists between the two beings, exhibits itself in the most unmistakeable manner.

Modern zoologists have done rightly in refusing to admit mankind into the same order with beings so infinitely below them, as are even the very highest of the apes. The unprogressive animal is restricted to a narrow circle of thought and reason, and is totally devoid of that great privilege of human nature which we call by the name of aspiration. Man ever proceeds onwards and upwards, anticipating something beyond that which he possesses, while the brute creation remain in the same course of life in which they were originally placed. The records of geological experience, show that Simiadæ of gigantic stature existed on earth ages before the creation of human beings. Relics of these creatures have been found in various parts of the globe, and even in the tertiary formations of our own island. Apes were, therefore, at least contemporary with mankind; but while men have progressed, the apes have stood still, and always will stand still as long as they remain upon earth. The ape which saw the light in the year B. C. 4,000, was not a whit behind its descendant of the year A. D. 1898 in intellect or civilization; and if the order were to be continued for twenty thousand years longer, the last ape would be not a step nearer civilization than the primeval pair. Within its own little circle of life, many of its bodily senses are far more acute than those of man, and its bodily powers greater; but there ends the advantage. The animals are only partial and individual in their existence, restricted to a small sphere of life, and often confined within a very limited portion of the earth. These very limits place the animals at an immeasurable distance from man, who spreads himself over the entire earth, enduring with equal ease the fierce rays of the tropical sun, or the icy blasts of the arctic gales, and accommodating himself, through the agencies which his intellect projects, to these totally dissimilar modes of life.

BUSHMAN.

Closely connected with the preceding animal is the large black ape, which is now well known by the name of Chimpanzee.

This creature is found in the same parts of Western Africa as the gorilla, being very common near the Gaboon. It ranges over a considerable space of country, inhabiting a belt of land some ten or more degrees north and south of the torrid zone. For some little time it was supposed that the gorilla was simply an adult Chimpanzee, but zoologists now agree in separating it from that animal, and giving it a specific name of its own.

The title *niger*, or black, sufficiently indicates the color of the hair which envelops the body and limbs of the Chimpanzee. The tint of the hair is almost precisely the same as that of the gorilla, being nearly entirely black; the exception being a few whiter hairs scattered thinly over the muzzle. Age seems to give the hair of the animal a grayish tint in many places. As in the gorilla, the hair of the fore-arm is turned towards the elbow, where it meets the hair from the upper arm, and forms a pointed tuft. On the chest and abdomen it is rather thinner than on the remainder of the body, and permits the skin to be seen between the hairs, but on the arms and other parts it is sufficiently thick and long to hide the skin altogether. There is a small beard on the chin and face, which has a Chinese kind of aspect about it.

With very few exceptions, the nostrils of the Quadrumana are placed almost flat upon the face, and are devoid of that projecting character which gives such expression to the human

countenance. Even in that very large-nosed animal, the Proboscis Monkey, the nostrils are only oval orifices for the conveyance of air, and seem as devoid of character as those of a wax doll.

Just as man is the only being that possesses two hands and feet, so is he the only inhabitant of earth who can lay claim to a nose. All the Mammalia have nostrils, and some species are endowed with wonderful powers of scent, such as the dogs, the deer, and others. Some of them carry a proboscis more or less elongated, such as the elephants and the tapirs. Then there are some, such as those of the porcine group, which possess snouts; but not one of them has a nose.

So in the Chimpanzee and its relatives, the muzzle projects exceedingly, and the nostrils lie almost flatly upon the projecting mass. Herein lies one of the chief characteristics of the simian countenance, which is not so conspicuous when the face is viewed directly from the front, as when it is turned with the profile towards the observer. In front, the flattened and divergent nostrils, together with the projecting muzzle, are not forced on the notice, and might escape a hasty observation; but if the animal turns its head, then the simian character shows itself in all its repulsive brutality.

Even in the young Chimpanzee, this preponderance of the face and jaws over the brain-skull is very considerable, and, as we have already seen, continues to increase as the animal draws nearer to maturity. The distinction is even more clearly shown if the lower jaw be removed, and the skull examined from below; for then, the disproportion between the animal and reflective parts shows itself most forcibly.

In its native country, the Chimpanzee lives in a partly social state, and at night the united cries of the community fill the air with their reiterated yells. If we may credit the reports given by the natives of Western Africa, the Chimpanzees weave huts for themselves, and take up their residence in these dwellings. Now it is a well-known fact that the orang-outang, which comes next in our list, can rapidly frame a kind of platform of interwoven branches, and so it is not beyond the bounds of credibility that the Chimpanzee may perform a work of similar character. Only, the chief difference between the customs of the two animals seems to be, that the one lives *upon* the structure or roof, if it may so be called, and the other beneath it. Some travellers say, that although the huts are actually inhabited, yet that only the females and young are permitted to take possession of the interior, and that the male takes up his position on the roof.

The latter supposition derives more force from those habits of the Chimpanzees with which we are acquainted, and which have induced naturalists to give to the entire genus, the name of *troglodytes*. This term is compounded from two Greek words, signifying a "diver into caverns," and was applied to this ape, because it seems to prefer rocky and broken ground to the forest branches, which form the refuge of nearly all quadrumanous animals.

This compound word is not of modern invention; for in the works of Aristotle, Pliny, and other writers on the subject of natural history, much mention is made of a race of men who lived in rocky caverns, and who earned, by their burrowing habits, the title above mentioned. The language and costume of these people were as barbarous as their habitations, for the former characteristic was said to resemble the hissing of serpents, rather than to bear any likeness to articulate speech, and in the latter accomplishment they were totally deficient in the hotter months. It is possible that the Bushman tribes may have given rise to these descriptions, which, indeed, would not be very erroneous if they had been used in depicting the "Digger" Indians of the New World.

Be this as it may, it is a remarkable fact that the Chimpanzees are groundlings, and are not accustomed to habitual residence among the branches of trees. Although these apes do not avail themselves of the protection which would be afforded by a loftier habitation, yet they are individually so strong, and collectively so formidable, that they dwell in security, unharmed even by the lion, leopard, or other members of the cat tribes, which are so dreaded by the monkey tribes generally. Even the elephant yields to these active and ferocious animals, and leaves them undisturbed. Yet a Chimpanzee would not dare to meet a panther in single combat, and depends for safety upon the assistance that would be afforded by its companions.

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CHIMPANZEE.

This is shown by a curious and rather absurd incident that occurred on board a ship, where a young and docile Chimpanzee suddenly came in sight of a caged panther, which had taken voyage in the same vessel.

The unexpected sight of the panther entirely overcame his feelings, and with a fearful yell he dashed along the deck, knocking over sundry of the crew in his passage. He then dived into the folds of a sail which was lying on deck, covered himself up with the sail-cloth, and was in such an agony of terror, that he could not be induced to come out of his retreat for a long time.

His fright was not groundless, for the panther was as much excited as the ape, only with eager desire, and not with fear. It paced its cage for hours afterwards, and continued to watch restlessly, much as a cat may be seen to watch the crevice through which a mouse has made good its escape.

There are also strange reports, which are still credited, that the Chimpanzees carry off negresses, and detain them in the woods for years, sometimes until they are released by death from their terrible captivity.

The food of these creatures appears to be almost entirely of a vegetable nature, and they are very unprofitable neighbors to any one who has the misfortune to raise crops of rice, or to plant bananas, plantains, or papaus, within an easy journey of a Chimpanzee settlement. As is the case with many of the monkey tribes, the animal will eat food of a mixed character, when it is living in a domesticated state.

The climate of France seems to be better suited to these animals than that of England.

In the Jardin des Plantes, in Paris, there was a remarkably fine specimen of the Chimpanzee. Black, sleek, and glossy, he was *facile princeps* in the establishment, and none dared to dispute his authority.

He was active enough, and displayed very great strength, and some agility, as he swung himself from side to side of the cage, by means of the ropes that are suspended from the roof; but he preserved a dignified air as became the sole ruler.

There was a kind of aristocratic calmness about the animal, and he would, at intervals, pause in his airy promenade, and, seating himself on a convenient spot, deliberately scan the large assembly that generally surrounded the monkey-house. His survey completed, he would eat a nut or a piece of biscuit, and recommence his leisurely gambols. His health seemed to be perfectly good, as was shown by the alertness of his movements, and the full, open look of his eyes.

A sad contrast to this animal was presented by a wretched little Chimpanzee which I saw in England. It was still possessed of sufficient strength to move about its cage, but executed all its movements in a slow, listless manner, that would have told its own tale, had not the frequent hacking cough spoken so plainly of the consumption that was consuming its vitals. The countenance of the poor creature was very sad, and it did not appear to take the least interest in anything that occurred.

I have seen many monkeys with this sad aspect, and was always haunted by their piteous looks for days afterwards.

The ravages which this disease can make in the delicate formation of a monkey's lung, before the creature finally succumbs, must be seen to be appreciated. The whole organ is so eaten up, and its color and substance so changed, that the spectator marvels that the creature's life could have been sustained for an hour under such circumstances.

As long, however, as they resist the untoward influence of our climate, the specimens which we have known, have always been extremely gentle and docile. Taught by the instinctive dread of cold, they soon appreciate the value of clothing, and learn to wrap themselves in mats, rugs, or blankets, with perfect gravity and decorum. Dress exercises its fascinations even over the ape, for one of these animals has been known to take such delight in a new and handsome costume, that he repudiated the previous dress, and in order to guard against the possibility of reverting to the cast-off garment, tore it to shreds. Whether the natives of Western Africa speak rightly in asserting that the Chimpanzee is capable of using weapons, is at present rather a doubtful point. The negroes say that the "Baboos," as they call the

animals (the name evidently being a corruption from our own word Baboon), make use of clubs, staves, and other rude weapons, and that they can use them with great address. Certain it is, that the adult Chimpanzee has been known to snap with a single effort branches so thick, that the united strength of two men could hardly bend them. But whether the animal would possess sufficient intellectual power to make use of a weapon thus obtained, is not so certain.

It is said that they have a sufficient amount of knowledge to be aware that the strength of a man lies in his weapons, and not in his muscles only; and that if a hunter should draw on himself the vengeance of the troop, by wounding or killing one of their number, he can escape certain death by flinging down his gun. The enraged apes gather round the object that dealt the fatal stroke, and tear it to pieces with every mark of fury. While they are occupied with wreaking their vengeance on the senseless object, the owner of the fatal weapon escapes unnoticed.

The strength of arm with which this animal is endowed, has already been shown. But although the hinder limbs are not possessed of that gigantic muscular strength which is given to the arms, yet they are powerful to a degree that would be remarkable in any animal less athletic than the Chimpanzee. One of these creatures has been seen to lower itself backwards from the bar on which it was sitting, and to draw itself up again, merely by the grasp of the hinder feet.

The age to which the Chimpanzee attains in its wild state, is as yet unknown. But to judge by the length of time that elapses before the animal reaches maturity, its life cannot be very much less than that of the human inhabitants of the same land. Nine or ten years are spent by the Chimpanzee before it has reached the perfection of its development; and it is well known that the inhabitants of the tropical regions attain to maturity at a very early age indeed.

A peculiarly fine specimen of the Chimpanzee, which was tamed and domesticated in its native country, lived to the age of twenty-one years. This animal was possessed of gigantic strength, and on one occasion was intercepted in the act of carrying a soldier into the tree to which he was chained. This ape might, however, have been a specimen of the gorilla.

One great and almost radical objection to the weapon-using powers of the Chimpanzee, may be found in the difficulty which these animals experience in standing erect. In order to use a weapon effectively, the hands and arms must be at liberty, and the feet planted firmly on the ground. A defect in either of these conditions, is fatal to the right handling of the weapon. Now, as the Chimpanzee has much difficulty in preserving even a semi-erect position, and is forced to aid itself by placing the backs of its hands on the ground, it will be at once seen that a club would not give very much assistance to the creature. It might certainly launch stones with force and effect; but a weapon that requires the full and independent use of both sets of limbs, would be of small benefit.

Besides, the creature is already so terribly armed by nature with formidable fangs, and limbs of Herculean strength, that it needs no artificial means of offence, and would probably be rather embarrassed by them than otherwise.

Still, it is not improbable that these inquisitive animals have seen their human neighbors armed with sticks, and in that irresistible spirit of imitation to which monkey nature seems to be a victim, have armed themselves in similar manner, though with certain detrimental results. Should they really have recourse to these artificial and useless weapons, when brought into collision with human foes, it may be a providential means of depriving them of those terrible natural weapons, which would be truly formidable, and so causing them to be the more easily overcome by man. Judging from the familiar instances of their imitative nature, we may safely allow that the Chimpanzees do carry sticks, although we may infer that such weapons would be worse than useless to their bearers.

In common with the orang-outan, and several other members of the same family, the Chimpanzee is possessed of extremely mobile lips. In the lips, indeed, the whole expression of the face seems to be concentrated; and by the lips, the animal expresses the various emotions of fear, astonishment, hatred, rage, or pleasure, that agitate the ape's brain. Those lips

can be protruded until they assume an almost snout-like aspect; they can be moulded into the strangest forms; they can be withdrawn, and almost obliterated from the countenance, when the creature extends its mouth into the grin of anger, exhibiting its sharp teeth, and uttering its furious cries. There are in the face of the ape none of those delicate lines that render the human countenance an index of the mind within; and, therefore, the animal makes the most of the limited means which it possesses. Articulate voice it has none, although it can be taught to comprehend the commands of its instructor; but it is a proficient in natural language of action, and by gesture can make itself understood without difficulty.

Though the language of the ape be not articulate, according to our ideas, yet in their wild state the Chimpanzees can talk well enough for their own purposes. One proof of this, is the acknowledged fact that they can confer with one another sufficiently to act in unison, at the same time and place, and with a given object.

Strong and daring as they are, they do not appear to seek a contest with human beings, but do their best to keep quietly out of the way. Like most animals that herd together, even in limited numbers, the Chimpanzees have ever a watchful sentinel posted on the look-out, whose duty it is to guard against the insidious approach of foes, and to give warning if he sees, hears, or smells, anything of a suspicious character.

Should the sentinel ape perceive a sign of danger, he sets up a loud cry, which has been likened to the anguished scream of a man in sore distress. The other apes know well enough the meaning of that cry, and signify their comprehension by answering cries. If the danger continues to threaten, then the ape-conversation becomes loud, shrill, and hoarse, and the air is filled with the various notes of the simian language, perfectly understood by themselves, although to human ears it consists of nothing but discordant yells and barks.

The arms of this animal, of the gorilla, and the orang-outan, are of considerably greater length than might be inferred from the height of the animal. When these creatures aid their steps by placing the hands on the ground, they have the curious habit of resting the knuckles on the ground, instead of the palms of the hands, as might have been supposed. From this peculiarity, the three apes have received the appropriate title of "knuckle-walkers."

The head of the Chimpanzee is remarkable for the large development of the ears, which stand prominently from the sides of the head, and give a curiously peculiar expression to the contour of the head and face.

We should probably have seen many more specimens of this ape imported into this country, had not the superstitious fears of the natives kept them aloof from meddling with these animals. Probably on account of the weird resemblance to the human form, which is one characteristic of their race, or on account of their cunning, the inhabitants of the Gaboon and the neighborhood labor under the dread of being bewitched by the Chimpanzees, and so very prudently let them alone. Certainly, they would be "no canny" to deal with, and the discretion exercised is not to be blamed.

THE ORANG-OUTAN.

THE title of Satyrus, or Satyr, is very rightly applied to the huge ape which is known by the name of ORANG-OUTAN.

For, saving that the long-eared Satyrs of the classic authors were more intellectual in countenance, and usually wore hoofs instead of hands at the extremities of the lower limbs, there is no small resemblance between the veritable and the imaginary wild man of the woods.

The Orang-outan is a native of Asia, and only to be found upon a small portion of that part of the globe. Borneo and Sumatra are the lands most favored by the Orang-outan, which inhabits the woody districts of those islands, and there rules supreme, unless attacked by man.

There seem to be at least two species of this animal, that are found in Borneo, and some zoologists consider the Sumatran ape to be a third species.

The natives distinguish the two Bornean species by the name of Mias-kassar, and Mias-pappan, the latter of which animals is the *Simia satyrus*, so well represented in the engraving.

The Pappan is a truly terrible animal when roused to anger, and would be even more formidable than is the case, were it endowed with a less slothful disposition. Its length of arm is very great; for when the animal stands erect, and permits the arms to hang by its sides,

ORANG-OUTAN.—*Simia satyrus.*

its hands can nearly touch the ground. The muscular power of these arms is proportionate to their length, and it is chiefly by means of the upper limbs that the ape makes progress among the boughs of the trees on which it loves to live.

So powerful, indeed, are the arms, that a female Orang has been known to snap a strong spear like a reed, and this after she had been weakened by many wounds and loss of blood. In attack the Orang-outan is not sparing of teeth as well as hands; and uses to the utmost

the weapons with which it has been endowed. The teeth of an adult Orang are truly formidable weapons, and it is said that even the leopard cares not to prove their power. So strong are even the front teeth, that they are capable of gnawing through and tearing away the dense fibrous covering in which the cocoa-nut is enveloped, and possibly can cut through the hard shell itself. Besides these teeth, the Orang is furnished with enormous canines, or tusks, the object of which is probably to act as offensive weapons; for the Orang is a vegetable-feeding animal, and the canine teeth can hardly be given merely for the purpose of cutting vegetable food.

Although the hind limbs are not so largely developed as the arms, yet they possess great power, and are perfectly adapted to the purpose which they serve. For terrestrial locomotion they are anything but fitted, as the animal is unable to plant the sole, or rather the palm, flat upon the ground, and rests upon the outside edges of the feet.

The walk of the Orang-outan is little better than an awkward hobble, and the creature shuffles along uneasily by help of its arms. The hands are placed on the ground, and are used as crutches in aid of the feet, which are often raised entirely from the ground, and the body swung through the arms. Sometimes it bends considerably backwards, and throwing its long arms over its head, preserves its equilibrium by their means.

This attitude is caused by the peculiar structure of the hind limbs, which, besides their comparative shortness, are only loosely jointed to the hip-bones. The Orang-outan is destitute of the short, but very strong ligament, that binds the thigh-bone to the hip-joint, and which is called the *ligamentum teres*. This ligament is very powerful in man, and plays an important part in giving him that steady tread, which alone is sufficient to distinguish the human species from the apes.

But the Orang-outan is intended for an arboreal life, and requires limbs that can adapt themselves to the boughs. Therefore the legs are so twisted inwards, that the feet can grasp the branches freely, and hold the body in its position, while the long arms are stretched out to take a fresh hold.

Among the trees the Orang-outan is in its element, and traverses the boughs with an ease and freedom that contrasts strongly with its awkward movements when on the ground. It has a curious habit of making for itself a temporary resting-place, by weaving together the branches so as to make a rude platform or scaffold on which it reposes. The powerful limbs of the animal enable it to execute this task in a very short time. Rajah Brooke of Saráwak narrates an interesting tale of a female Orang-outan, which when severely wounded ceased her attempts to escape, and weaving together a branch-platform, seated herself upon it, and quietly awaited her end. The poor animal received several more shots before she expired, and as she fell dead upon her extemporary edifice, the hunters were put to some trouble before they could dislodge the dead body. The whole process of weaving the branches and seating herself did not occupy more than a minute.

When the hunters desire to capture an adult Orang-outan, they hem him in by felling the trees around that on which he is seated, and so deprive him of the means of escape. Having thus cut off his retreat, they apply the axe to the tree of refuge, and endeavor to secure the ape before he has recovered from the shock of the fall.

The adult male animal is singularly hideous in aspect, owing much of its repulsiveness to the great projection of the jaws and the callosities that appear on the cheeks. As is the case with all the larger apes, it becomes sullen and ferocious as it approaches its adult state, although in the earlier years of its life it is docile, quiet, and even affectionate. Several young specimens have been brought to Europe, and were quite interesting animals, having many curious tricks, and exhibiting marks of strong affection to any one who treated them kindly. One of these animals learned to take its meals in a civilized manner, using a spoon, or a cup and saucer, with perfect propriety.

When brought to colder climates than that of its native land, the animal covets warmth, and is fond of wrapping itself in any woollen clothes or blankets that it can obtain. On board ship it has been known to rob the sailors or passengers of their bedding, and to resist with much energy any attempt to recover the stolen property.

Though sufficiently docile and good-tempered when it has its own way, the young Orang is rather subject to sudden gusts of passion when crossed in its wishes, and in such cases puts forth its powers with much effect. But the angry passion soon passes away, and the creature seems to be ashamed of its conduct.

One of these animals which I watched for some little time, had a curiously wistful and piteous expression of countenance, and although very young, its face was wrinkled like that of an old man of eighty. The creature sat and looked out of its deeply set eyes, as if the cares of the nation rested on its shoulders. It was not very lively, but moved about among the branches with great ease. The form was not at all symmetrical, for the long arms, and feet, and hands seemed strangely out of proportion with its round, weakly-looking body, so that it involuntarily reminded the spectator of those long-legged, round-bodied spiders that are so common about old walls.

The lips were very mobile, and the animal moved them when agitated by any emotions; sometimes shooting them forward like the poutings of a petulant child, and sometimes drawing them together in strange wrinkles. The neck was but slightly indicated, and the whole animal presented an uncouth, goblin-like aspect.

One of these animals that was brought to England by Dr. Abel, exhibited many curious habits.

It had been taught to walk in an erect position, without supporting itself by extraneous help, but the erect posture was so ill adapted to its structure, that it could only preserve its balance by raising the arms over its head, and throwing them behind it, as has already been mentioned. The mode in which the head is united to the neck renders the equilibrium uncertain.

This animal was tolerably omnivorous in appetite, for although its usual food consisted of fruits and bread, it was exceedingly fond of raw eggs, and would eat almost any kind of meat, whether dressed or raw. It would drink water, or milk, or beer, preferring the two latter liquids to any other. But it was also fond of wine, and was partial to mixtures of a still more potent character. Coffee and tea were favorite beverages with the animal, so that it displayed a decidedly civilized taste.

As might be expected, while it was on board ship the sailors petted their companion after their wont, and it was quite familiar with them, showing no fear, and even occasionally indulging in a sham fight. But it was struck with unaccountable fright at some very harmless creatures that became inmates of the same vessel. They were only common turtles, perfectly incapable of doing damage, and destined for soup. But the mere sight of them terrified the Orang-outan to such an extent that it ran away to the mast-head, and, protruding its lips, uttered a series of strange sounds. A land tortoise affected the animal in a similar manner, as also did the sight of a number of men bathing and floating in the water. Perhaps there was some connection in the mind of the ape between the turtle and the cayman, which supposition is strengthened by the alarm caused by the bathers. I have known a common snail cause a great turmoil in a cage of monkeys, and there may possibly be some instinctive antipathy between monkeys and crawling animals.

This singular emotion is worthy of notice, because it proves the fallacy of judging any animal to be the natural enemy of another, merely because the latter is terrified at its approach. Granting that the apes might occasionally have been prompted by their mischievous nature to meddle with the turtles, and to have been half-blinded by a sand-shower thrown from the turtle's flippers, or have suffered a painful wound from the snap of a turtle's sharp jaws, yet the little land-tortoise could not do damage. As we have just mentioned, even the presence of a poor garden-snail is a terror to many members of the monkey race.

It is therefore evident that the antipathy does not exist only in some individuals which may have suffered by the reptiles, but that it is the common propensity of these strange animals. We can easily understand that an ape should display an agony of terror at the sight of a leopard, or a snake, for the one has teeth and claws, being also very fond of ape-flesh, and the other has fangs. But that the same animal should be just as frightened when it sees a turtle, a tortoise, or a man bathing, is indeed remarkable.

Our best insight into the habits of animals is generally gained by watching the actions of a single individual, and these biographies are usually found to be most interesting. An admirable description has been given by Dr. Abel of the young Orang-outan, which has been already mentioned.

At first the ape was put into a cage, but he broke the bars and got out. Then he was chained, but he detached the chain from the staple, and finding that the heavy links incommoded him, he coiled the chain round his shoulder, and to prevent it from slipping, held the end in his mouth. As he always succeeded in escaping from his bonds, his keepers made a virtue of necessity, and permitted him to enjoy the full range of the vessel. Among the ropes he was quite at home, and, trusting to his superior activity, was accustomed to take liberties with the sailors, and then escape among the ropes. One very curious trait in his character must be given in the words of the narrator.

"Although so gentle when not exceedingly irritated, the Orang-outan could be excited to violent rage, which he expressed by opening his mouth, showing his teeth, and seizing and biting those who were near him.

"Sometimes, indeed, he seemed almost driven to desperation; and on two or three occasions committed an act which in a rational being would have been called the threatening of suicide. If repeatedly refused an orange when he attempted to take it, he would shriek violently and swing furiously about the ropes, then return and endeavor to obtain it. If again refused, he would roll for some time like an angry child upon the deck, uttering the most piercing screams; and then, suddenly starting up, rush furiously over the side of the ship and disappear.

"On first witnessing this act, we thought that he had thrown himself into the sea; but on a search being made, found him concealed under the chains."

He learned artificial tastes of civilization, and preferred tea and coffee to water. Tastes less natural and more to be regretted soon followed, for he took to drinking wine, and was so fond of spirituous liquids, that he was detected in stealing the captain's brandy-bottle. This interesting animal survived the English climate for about eighteen months, and then succumbed to the usual foe of the monkey race. The fatal issue of the disease was probably promoted by the shedding of his teeth.

In its native woods, the Orang-outan seems to be an unsocial animal, delighting not in those noisy conversaziones which rejoice the hearts of the gregarious monkeys and deafen the ears of their neighbors. It does not even unite in little bands of eight or ten as do many species, but leads a comparatively eremitical existence among the trees, sitting in dreamy indolence on the platform which it weaves, and averse to moving unless impelled by hunger, anger, or some motive equally powerful. When it does move, it passes with much rapidity from tree to tree, or from one branch to another by means of its long limbs, and launches itself through a considerable distance, if the space between the branches be too great for its reach of arm.

It has already been mentioned that the adult Orang is a sullen and ferocious animal. It is almost totally animal in character; there is hardly any space for the brain; the head is surmounted with heavy ridges of bone, showing the great strength of the muscles that are attached to them; the lower part of the face and the jaws projects greatly, and, in fine, the skull is almost wholly made up of face, jaws, and bony ridges. The teeth, too, are very formidable.

The hair of the Orang-outan is of a reddish chestnut hue, deepening here and there into brown. The texture of the hair is coarse, and its length varies according to the part of the body on which it is placed. Over the face, back, breast, shoulders, and arms, it falls in thick profusion, becoming especially long at the elbow-joint, where the hairs of the upper and fore-arm meet. The face is partly covered with a beard, which seems to increase in size as the animal grows older. The hair of the face takes a lighter tinge of red than that of the body, and merges the red or auburn tint in the brown, on the inside of the limbs.

At a little distance, the face appears to be black; but if examined closely is found to present a bluish tint.

The Mias-kassar is similar to the Mias-pappan in general appearance, and color of hair;

but is evidently a different species from the Pappan, and not the young of that animal. Of this ape, Sir J. Brooke says, that it is "a small, slight animal; by no means formidable in its appearance; with hands and feet proportioned to the body. They do not approach the gigantic extremities of the Pappan either in size or power; and, in short, a moderately strong man could readily overpower one; when he would not stand a shadow of a chance with the Pappan."

The height of a full-grown Pappan does not seem to be quite so great as has been supposed. Credible informants, however, tell us that they usually grow to the height of five feet, or even more, which, taking into consideration the extreme length of the arms, and the general muscular development, gives us a very large ape indeed. Sir J. Brooke was deceived into the belief that one of these animals which he killed was nearly six feet in stature; but was surprised to find when the animal was dead that the height was very much overrated.

Many of the quadrumanous animals, among which are the large apes, the siamang, many of the tailed monkeys, and the baboons, are furnished with a singular appendage to the throat, which has been carefully investigated by M. Vrolik. This appendage consists of a pouch, varying in form and size, which is connected with the lungs by an opening into the windpipe, and can be dilated with air at the pleasure of the animal.

The result of his researches is, that the air-pouch is not connected with the voice; but that it is intended to reduce the specific gravity of the animal, and to assist it in climbing or leaping. The pouch is not a mere hollow sac; but is furnished with many subordinate receptacles, something like a badly made glove, with three or four additional fingers or thumbs. These prolongations lie between the muscles of the throat. They are larger in the male than in the other sex, and increase together with the growth of the animal. In the Orang-outan, these pouches are very largely developed; much more so than in the chimpanzee. The siamang possesses them of a large size, while the gibbons are without them.

The generic name *Simia*, which is applied to these apes, and which serves to distinguish the entire family, is derived from the Greek word *Simos*, signifying "flat-nosed."

THE SIAMANG.

THE accounts of this ape vary extremely. Some authors pronounce the Siamang to be a dull and stupid animal, caring not to distinguish between friends and foes; never moving until forced to do so, and hardly even taking the trouble to put food into its mouth. Others give to the Siamang the character of being a lively and affectionate creature, soon tamed, and attaching itself strongly to those with whom it has made acquaintance, and who behave kindly to it. As the latter character has been borne by the Siamang when in the possession of those who treated it well, and studied its habits, it is but justice to the creature to give it the credit of good behavior.

The SIAMANG is a Sumatran animal, and, as far as is known, is found in no other spot on the globe. The color of the hair is black, and it is so thickly planted, that, although it is but short, it conceals the skin, except in one or two spots, such as the upper part of the breast, where the skin can be seen through the woolly covering. It is a large animal, measuring some three feet in height, when it has attained to its full growth. The arms are long, and the hands narrow, with slender fingers covered with the woolly black hair as far as the roots of the nails. The term *Syndactyla*, or "joined-fingers," is applied to this ape because the first and second fingers of the hinder limbs are united as far as the middle of the second joint. This union of the members is by means of a membrane that runs between the fingers, and does not extend to the bones, which when stripped of their fleshy coverings are found to be as distinct as those of any other animal.

There is a curious structure of the throat which is worth notice. This consists of a double pouch under the chin and throat, formed by the loose folds of skin. When the animal is excited either by anger or pleasure, it inflates these pouches to such a degree, that their exterior surface becomes quite glossy. The pouches are without hair.

At sunrise and sunset, the Siamangs assemble in great numbers, under the command of a chief who is thought by the natives to be weapon-proof, and, being assembled, utter most hideous yells, each striving to outdo the other in their cries. It is supposed by some writers that the peculiar resonance of the animal's cry, is in a great measure to be attributed to the throat-pouches above mentioned. M. Vrolik, however, seems to be of a different opinion, as has been already noticed in the account of the Orang-outan. Except at the beginning and end of the day, the Siamangs are comparatively quiet.

There is not a very great development of the combative nature in this animal, which is timid, unless urged by those feelings which inspire even the weakest and mildest creatures with reckless courage. The poor animal has no notion how to inflict or avoid a blow; but in defence of its young, when threatened with danger, or in revenge for their loss, if slain, the mother Siamang dauntlessly flings herself upon the enemy, caring nothing for her own life in comparison with that of her offspring.

When permitted to range unmolested in the woods, the care of the mother Siamang for her young affords a pleasing, and sometimes an amusing spectacle. But the father must not be passed over without the tribute of honor due to his paternal virtues. Those who have watched the Siamangs as they wandered unrestrainedly, say that the parents divide the care of the family between them; the father taking care of the male offspring, and the mother of the females. They are properly solicitous about the cleanliness of their young charge, and duly wash them, rub and dry them, in spite of the screams and struggles of the little ones.

It seems to be a general rule, that when an animal is peculiarly adapted for one mode of life, displaying singular powers therein, it is quite at a loss when placed in an uncongenial condition. The bats, for example, are awkward and helpless animals when placed on a level surface; so are many of the swift-winged birds, such as the albatross, the frigate-bird, and others, while the diving-birds are just as clumsy on land as they are agile in the water. So it is with the Siamang, for its great length of limb, that gives it such powers of locomotion among trees, forms a serious impediment to its progress on level ground. Among the trees the Siamang is unapproachable; and although not quite so active as the gibbons, is yet sufficiently so to be perfectly secure from pursuit. But let the creature once descend to earth, and it is so embarrassed by its long limbs that it can be overtaken and captured with ease. Indeed, those specimens that have been taken unhurt, have almost invariably been made prisoners while struggling to regain the shelter of the trees.

One of these animals was for some time an inmate of a ship, where it became quite companionable, and gained the affections of passengers and crew. So far from exhibiting the sullen and sluggish demeanor which has been attributed to this ape, the Siamang displayed great activity and quickness, skipping about the ropes, and given to harmless tricks. It took a fancy to a little Papuan girl who was on board, and would sit with its arms round her neck, eating biscuit with her. It was of an inquisitive nature, running up the rigging, and watching from its elevated position a passing vessel, and remaining there until the ship was out of sight. In temper it was rather uncertain, and apt to fly into a passion if opposed in any wish.

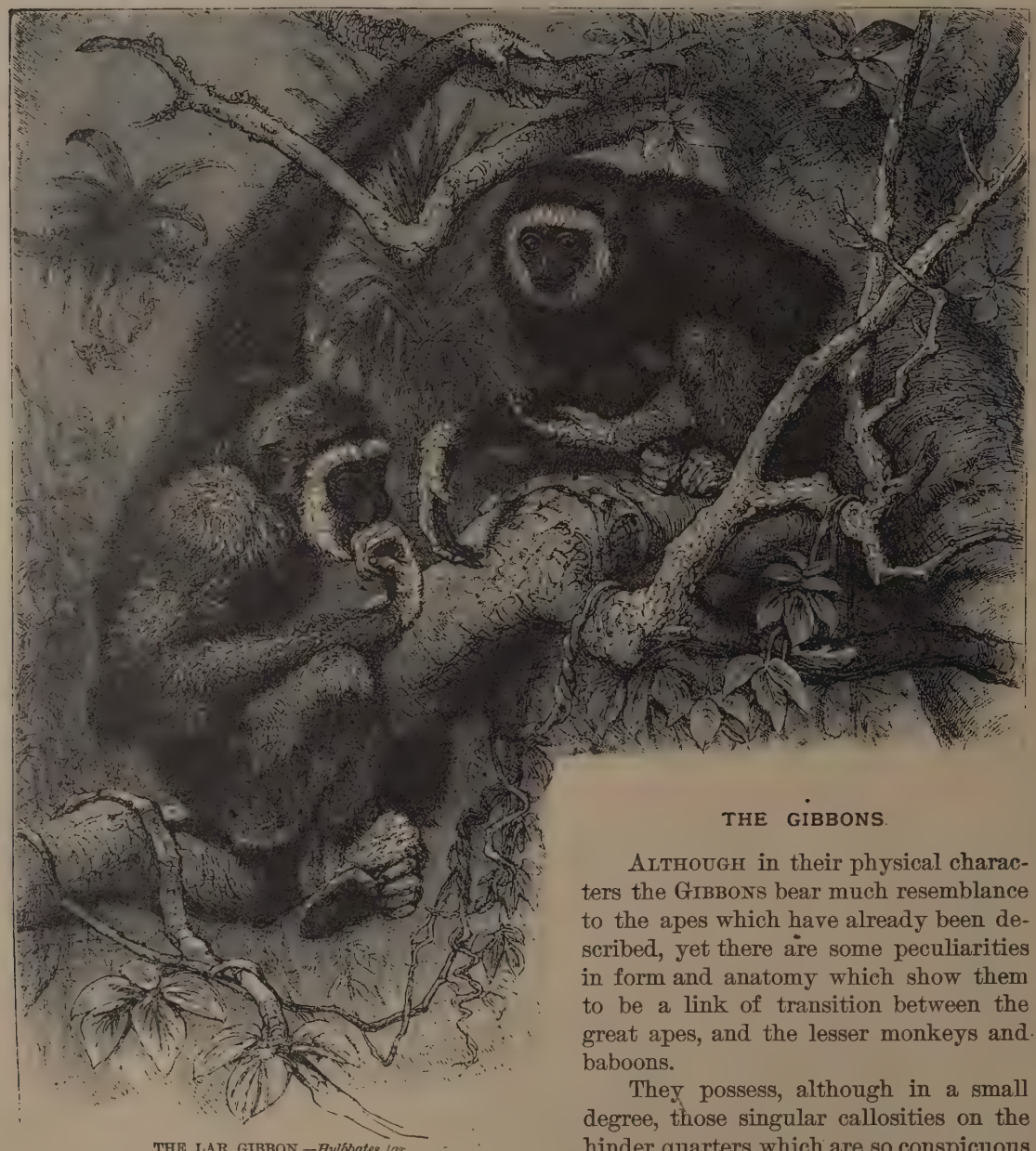
When thus excited, it would fling itself down, just like a naughty, spoiled child, roll about the deck with great contortion of limbs and face, strike at everything which came in its way, and scream incessantly, with a sound like "Ra! ra! ra!"

It had a strange predilection for ink, and in order to procure this remarkable dainty, would drain the ink-bottle whenever there was an opportunity of so doing, or suck the pens in default of the liquid itself. Being itself destitute of a tail, and feeling no fear of reprisals in that direction, the Siamang used to make very free with the tails of some monkeys that lived on board of the same vessel. Catching an unfortunate monkey by its caudal appendage, away went Ungka, as the ape was named, dragging the monkey after him along the deck, until the wretched animal writhed itself free from its tormentor. At another time, Ungka would carry the monkey by the tail up the rigging, in spite of its squeaks and struggles, and then quietly let it drop.

It was sensitive to ridicule; and when its feelings were hurt, it used to inflate its throat until it resembled a huge wen, and looked seriously at the offenders, uttering hollow barks at

intervals. This sound seemed to be used for the purpose of expressing irritation. Anger was expressed by the shrieking "Ra! ra!" and pleasure by a kind of mixture between a squeak and a chirp.

For the account of this animal we are indebted to Mr. Bennett, who has related many other traits indicative of its character. Sir S. Raffles possessed several specimens of this ape, and describes them as being social in their manners, and of an intelligent nature. Although they were powerful animals, they were gentle, and showed themselves to be pleased with the society of those persons to whom they were attached.



THE LAR GIBBON.—*Hylobates lar.*

THE GIBBONS.

Although in their physical characters the Gibbons bear much resemblance to the apes which have already been described, yet there are some peculiarities in form and anatomy which show them to be a link of transition between the great apes, and the lesser monkeys and baboons.

They possess, although in a small degree, those singular callosities on the hinder quarters which are so conspicuous in the baboon family, and assume such strange tints. The gorilla, chimpanzee, and the orangs, are entirely destitute of these peculiarities, but the Gibbons are found to possess them, although the callosities are very small, and hidden by the fur from a casual view.

As in the great apes, the arms of the Gibbons are of enormous length, and endowed with

exceeding power of muscle, though the strength which resides in these largely developed limbs is of a different character.

If the gigantic and powerful gorilla be compared to Hercules, then the light and active Gibbons may find their type in Mercury, the swift aerial messenger of the Olympian deities. The ponderous weight of the larger apes binds them to earth; and even the orangs, which are more active than the chimpanzee, are no very great adepts at leaping through great intervals of space. But the Gibbons seem to pass nearly as much time in the air as on the branches, shooting from one resting-place to another, with such rapid movements, that the eye can hardly follow their course—the very swallows of the monkey race.

From their wonderful agility in flinging themselves from branch to branch, or from tree to tree, naturalists have given to these animals the generic name of *hylobates*, signifying, "tree traverser." And carrying out the mythological comparison which has just been mentioned, the name Lar has been attributed to this species.

The SILVERY GIBBON derives its name from the silver-gray color which generally pervades the fur. In some parts of the body, however, there is a browner tinge, and the face and palms of the hands are quite black. The sides of the face are covered with white, furry hair, which is so plentiful, that although the ears are tolerably large, they are nearly hidden among the luxuriant hairy fringe that encircles the head. The eyes of this and of the other Gibbons are deeply sunk in the head. The size of the Silvery Gibbon is little different from that of Gibbons generally, the adult animal measuring about three feet or so in height. Active, as are all its relatives, it lives among the branches and tall canes of the Malaccas, and displays in these congenial habitations the same sportive agility that is so peculiar to the Gibbons.

SILVERY GIBBON.—*Hylobates leuciscus.*

A very different group of animals now comes before us, separated even by the outer form from the apes.

The chief distinction which strikes the eye, is the presence of a tail, which is of some length, and in several species, among which we may mention the SIMPAI itself, is extremely long and slender in proportion to the body. The arms of these animals are not of that inordinate length which is seen in the limbs of the apes, but are delicate and well proportioned. The hinder paws, or hands, are extremely slender, their thumbs being short, and are twice the length of the fore-paws.

Some of these monkeys are furnished with small cheek-pouches, while others appear to be destitute of these natural pockets. The callosities of the hinder quarters are well shown.

In this group of the Quadrumana, the characteristics of the apes disappear, and the animals betray more clearly their quadrupedal nature. Very seldom do they assume the erect

attitude, preferring to run on all fours like a dog, that being their legitimate mode of progression. Even when they do stand on their hind feet, the long tail at once deprives them of that grotesque semblance of the human form, which is so painfully exhibited in the tail-less apes. Besides these external distinctions, there are many remarkable peculiarities in the anatomy of the internal organs, which also serve to settle the position of the animal in the order of nature. Among these internal organs, the stomach displays the most remarkable construction, being very large, and divided into compartments that bear some resemblance to those in the stomach of ruminating animals.

These monkeys are distributed through several parts of the world, the Simpai making its residence in Sumatra.

BUDENG.—*Semnopithecus maurus.*

This is a beautiful little animal, and is pleasing both for elegance of shape, and the contrasting tints with which its fur is decorated. The prevailing color of the body is a light chestnut, with a perceptible golden tinge, showing itself when the light falls obliquely on the fur. The inside of the limbs and the abdomen are not so bright as the rest of the body, but take a most sober tint of gray. At the top of the head the hair is straight, and is set on nearly perpendicularly, so as to form a narrow crest. The color of the crest, together with that of a narrow band running over the eyes and temples, is black. From this conspicuous peculiarity, the Simpai (*Presbytes melalophos*) is also called the Black-crested Monkey. The name Presbytes signifies an old man, and is given to these monkeys on account of the wizened, old-fashioned aspect of their countenances. The term "melalophos" is literally "black-crested," and therefore a very appropriate name for this species.

The length of this animal, measured from the nose to the root of the tail, is about twenty inches, and that of the tail itself is not very far from three feet. Its fur is very soft and glossy.

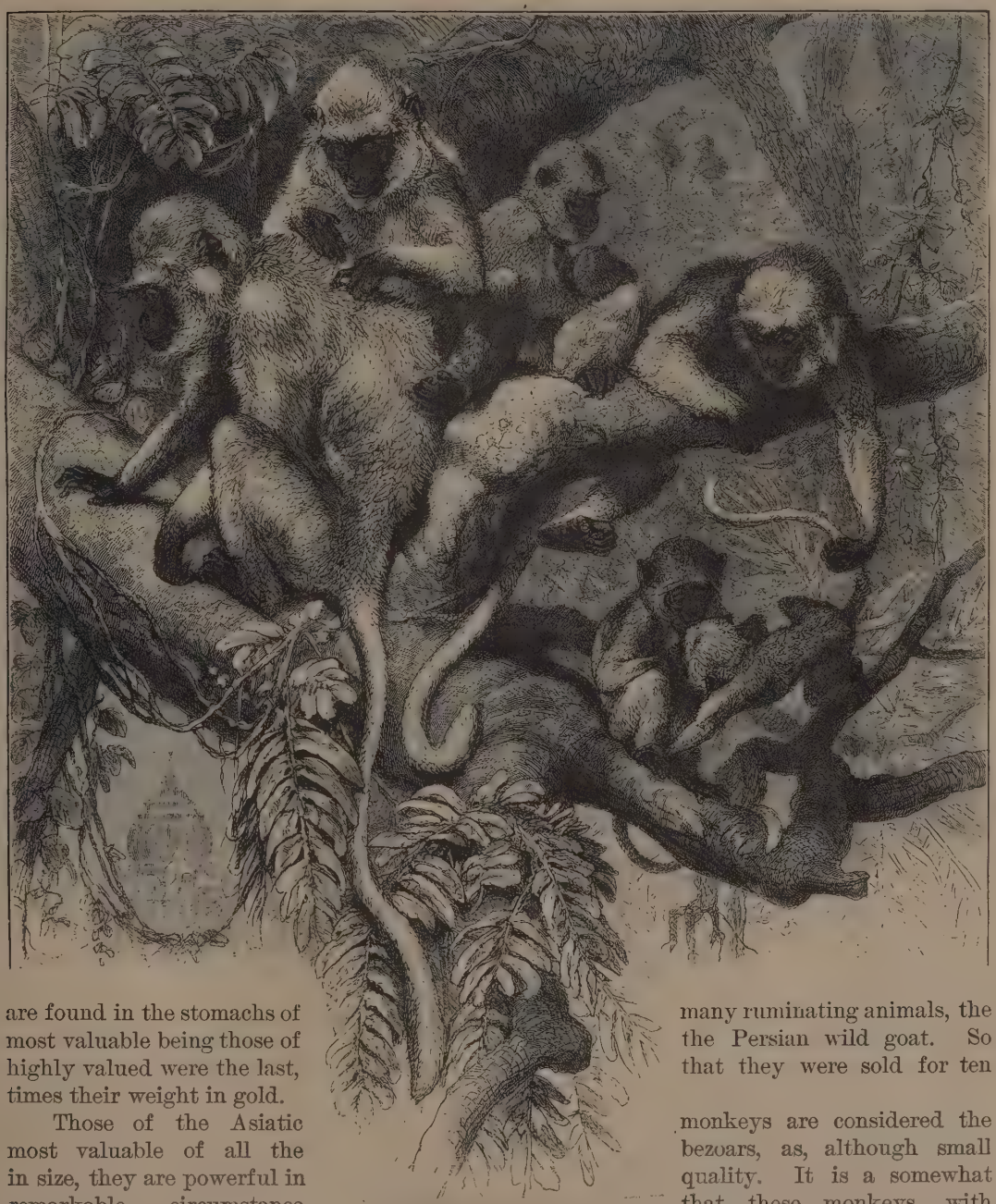
Several allied species are rather celebrated among furriers for the beauty of their natural garments, and suffer much from the hunters. A well-known example, the Negro Monkey, sometimes called the Moor, or the Budeng, furnishes the long black monkey-fur that is put to so many uses. Jet black as is the long silky fur of an adult Budeng, it is of a very different color when the creature is young. The fur of the very young Negro Monkey is of a yellowish red color, and the black tint appears first on the hands, whence it spreads up the arms, across the shoulders, and by degrees creeps over the whole body.

It is a native of Java, and is a gregarious animal, being found in troops of fifty or more in number, and extremely noisy on the approach of a human being. In temper it is said to be morose and sulky, so that, in spite of its beautiful coat, it is seldom domesticated. In such a case a bad temper must be a positive blessing to a monkey.

Not only for the skins are these monkeys valuable. Their teeth are in some favor for the composition of ornaments, being pierced and curiously strung together.

There is another substance which is furnished by some individuals among this group of monkeys, but is not always found in them. This is the bezoar, a substance which was long in high esteem for the cure of disease, and even now is used for that purpose by the physicians

of the East. The word bezoar is originally "bâd-zahr," or poison-expeller, and was applied to this substance as it was supposed to possess extraordinary virtue in destroying the effects of poison, whether administered internally, or applied to the bite of serpents, or the wounds caused by poisoned weapons. The bezoars are concretions, chiefly of phosphate of lime, which



ENTELLUS.—*Presbytes entellus.*

are found in the stomachs of many ruminating animals, the most valuable being those of the Persian wild goat. So highly valued were the last, that they were sold for ten times their weight in gold.

Those of the Asiatic monkeys are considered the most valuable of all the bezoars, as, although small in size, they are powerful in quality. It is a somewhat remarkable circumstance that these monkeys, with their approximation to the ruminant stomach, should produce the same description of substance that was formerly thought to be the special property of the ruminating animals.

A well-known example of this group of monkeys is the HOONUMAN, or ENTELLUS. This is a considerably larger animal than the Simpai, as the adult Hoonuman measures three or

four feet from the nose to the root of the tail, and the tail itself rather exceeds the body in length. The color of this monkey when young is a greyish brown, excepting a dark brown line along the back and over the loins. As the animal increases in years, the fur darkens in color, chiefly by means of black hairs that are inserted at intervals. The face, hands, and feet are black.

It is a native of India, and fortunately for itself, the mythological religion is so closely connected with it that it lives in perfect security. Monkeys are never short-sighted in spying out an advantage, and the Entellus monkeys are no exception to the rule. Feeling themselves masters of the situation, and knowing full well that they will not be punished for any delinquency, they take up their position in a village with as much complacency as if they had built it themselves. They parade the streets, they mix on equal terms with the inhabitants, they clamber over the houses, they frequent the shops, especially those of the pastrycooks and fruit-sellers, keeping their proprietors constantly on the watch.

Reverencing the monkey too much to afford active resistance to his depredations, the shopkeepers have recourse to passive means, and by covering the roofs of their shops with thorn-bushes, deprive the thieving deity of his chief point of vantage. Let it not be a matter of wonder that a thief can be a god, for even the civilized Romans acknowledged Mercury to be the god of thieves, and they only borrowed their mythology from a much more ancient source. Certainly the Hoonuman gives practical proof of his claims to be the representative of such a deity; for he possesses four hands with which to steal, and neglects no opportunity of using them all.

Conscious of the impropriety of its behavior, the monkey does not steal anything while the proprietor is looking at it, but employs various subtle stratagems in order to draw off the owner's attention while it filches his goods. Many ludicrous anecdotes of such crafty tricks are known to every one who has visited India, and employed his eyes.

The banyan-tree is the favored habitation of these monkeys; and among its many branches they play strange antics, undisturbed by any foes excepting snakes. These reptiles are greatly dreaded by the monkeys, and with good reason. However, it is said that the monkeys kill many more snakes in proportion to their own loss, and do so with a curiously refined cruelty. A snake may be coiled among the branches of the banyan, fast asleep, when it is spied by a Hoonuman. After satisfying himself that the reptile really is sleeping, the monkey steals upon it noiselessly, grasps it by the neck, tears it from the branch, and hurries to the ground. He then runs to a flat stone, and begins to grind down the reptile's head upon it, grinning and chattering with delight at the writhings and useless struggles of the tortured snake, and occasionally inspecting his work to see how it is progressing. When he has rubbed away the poor animal's jaws, so as to deprive it of its poison-fangs, he holds great rejoicings over his helpless foe, and tossing it to the young monkeys, looks complacently at its destruction.

Besides the reverence in which this animal is held through its deification, it has other claims to respect through the doctrine of metempsychosis, or the transmigration of souls through the various forms of animal life. From the semblance of human form which is borne by the monkeys, their frames were supposed to be the shrines of human souls that had nearly reached perfection, and thereby made their habitations royal. Therefore, to insult the Hoonuman is considered to be a crime equivalent to that of insulting one of the royal family, while the murder of a monkey is high treason, and punished by instant death. Many times have enthusiastic naturalists, or thoughtless "griffs," endangered their lives by wounding or killing one of these sacred beings. The report of such a sacrilegious offence is enough to raise the whole population in arms against the offender; and those very men who study cruelty as a science, and will inflict the keenest tortures on their fellow-beings without one feeling of compunction,—who will leave an infirm companion to perish from hunger and thirst, or the more merciful claws of the wild beasts, will be outraged in their feelings because a monkey has been wounded.

The hunters in India find these animals to be useful auxiliaries in some cases, though tiresome in the main. They collect on boughs when a tiger or similar animal of prey passes

under them, and often serve to point out to the hunter the whereabouts of the quarry. A tree thus covered with monkeys is a curious sight; for the boughs are studded with them as thickly as fruit, and the pendent tails give an absurd appearance to the group.

Although each part of every animal must be formed with some definite object, there are many which seem to be devoid of use, and among them is the monkey's tail.

Some of the monkeys—the spider-monkeys of America, for example—find in their tail a most useful member, by means of which they can suspend themselves from boughs, aid their limbs in tree-climbing, or, on an emergency, pick an object out of a crevice which the hand could not enter. But the use of the tails belonging to these old-world monkeys does seem to be very obscure.

Some writers have opined that the tails are intended to balance the body in the various attitudes assumed by its owner. But when we reply that the Gibbons, although very much more agile, and, from their very form, requiring more balancing than the monkeys, yet are totally devoid of tails, this supposition falls to the ground. It cannot be for the purpose of flapping away flies that these animals are furnished with such long and slender tails, for their shape renders them useless for that occupation; and, besides, the hands of the monkeys are much better fly-flappers than its tail could possibly be.

The question arises, "What does the monkey do with his tail?"

He nibbles it sometimes, when he is at a loss for occupation.

KAHAU.—*Presbytes larvátus.*

It is a curious fact that—at all events in captivity—the long-tailed monkeys *will* eat their tails, and nothing seems to deter them from this strange act. The tips of those members have been covered with plasters, and have been tied up in bandages, but without effect. The ends of the tails have been treated with aloes, cayenne pepper, and other disagreeable substances, just as the finger-tips of a nail-biting child are dressed. But, though the creature splutters and makes strange grimaces at the horrid flavors that greet his palate, he cannot refrain from the accustomed luxury, and perseveres in his nibbling. One great charm of this habit seems to be the excitement felt by the monkey in trying how far he can nibble without smarting for it. Whatever may be the cause, the effect is that the tail is gradually eaten up, in spite of all endeavors to prevent such a consummation. Considered in a social light, the tails are calculated to promote the merriment of the company, for they are admirable handles for practical jokes, and afford mutual amusement, not unmingled with indignation.

The Proboscis Monkey, or Kahau, as it is sometimes called, on account of its cry bearing some resemblance to that word, is an inhabitant of Borneo, and probably of several neighboring countries. It is, as may be seen by the engraving, an animal of very unattractive features, principally on account of its enormously lengthened nose. This feature does not present itself in perfection until the Kahau has reached its maturity. When the animal is

very young, there are but few indications of the singular length to which this feature will attain; for, although it is rather more prominent than in most of the monkeys, it is rather of that description of nose denominated "*retroussé*."

In size, the Kahau is about equal to the hoonuman, and seems to be an active animal, leaping from branch to branch, through distances of fifteen feet or more. The natives assert, that while leaping they take their noses in their hands, in order to guard that feature from being damaged by contact with branches. Whether this refinement of caution be true or not, it is certain that they do hold their outstretched hands in a manner unlike that of the generality of monkeys, and probably for the purpose just mentioned.

These monkeys are fond of society, assembling together in large troops, and howling with exceeding fervor. They observe hours, regulating themselves by the sun, at whose rising and setting they congregate together, and perform their arboreal gymnastics.

For the preternatural ugliness of the countenance, the Kahau is partially compensated by the beautiful coloring of its fur, which is thick, but not woolly, nor very long. The principal color in the body is a bright chestnut red; the sides of the face, part of the shoulders, and the under parts of the body being of a golden yellow. A rich brown tint is spread over the head and between the shoulders; the arms and legs taking a whiter tinge than the shoulders.

The nostrils of this creature do not at all resemble those of man, although the animal's nose seems to be a burlesqued edition of the corresponding feature of the human countenance. They are placed quite at the extremity of the nose, and are separated from each other by a very thin cartilage. They are therefore, as has been observed in a former page, quite devoid of that expressive character which is so strongly exhibited in the contour of the human nostril.

We will pass on to more pleasing animals; but before taking leave of this group of monkeys we must observe that they are hardly deserving of the title "Slow Monkeys," which has been applied to them. They sit quietly on the branches, with their tails hanging down, and their bodies gathered together; but they only need some exciting cause to make them throw off their seeming apathy. They then spring from branch to branch, flinging themselves towards their mark with wonderful precision, and are all life and energy.

THE COLOBUS.

THE scientific name which is given to this genus of monkeys, explains—as is the proper office of names—one of the leading peculiarities of the animals. The title "Colobus" is a Greek word, signifying "stunted," or "maimed," and is given to these animals because the thumbs of the two fore-limbs give but little external indication of their presence, so that the hand consists merely of four fingers. They are exclusively African animals. They are rather handsome creatures, and their hair is sufficiently long and silky to be valuable as a fur.

The Ursine, or Bear-like Colobus, is so named because the general color of its long black fur, and the form of the monkey itself, with the exception of the tail, has something of the bearish aspect. The cheeks and chin of this animal are covered with white hair; there is a white patch on the hind legs; and, with the exception of a few inches at its root, which retain the black hue of the body, the tail is of a beautiful white, terminated with a long and full white tuft.

Another species, called the Full-maned Colobus, is rather a remarkable animal, not so much on account of its habits, of which little is known, but on account of the huge mass of long hairs which cover the head and shoulders, falling nearly as low as the middle of the breast. The color of this mane, or "full-bottomed peruke," as it has also been called, is yellow, with black hairs intermixed. Like the Ursine Colobos, the Full-mane possesses a tail of a white color, decorated with a snowy-white tuft.

The Black Colobus is devoid of those exquisitely white portions of the fur that are so strongly marked in the Ursine and the Full-maned Colobus. The head, body, limbs, and even the tail, are jet black, unrelieved by any admixture of a lighter tint. This uniform black hue

of the long glossy fur, has earned for the animal the demoniacal title which will be found appended to the figure. Beside the sable garments that are conventionally attributed to the powers of darkness, the animal in question is probably in part indebted for its name to the black crest, that projects over the forehead and eyes with so pert and impish an air.

Our last example of this genus is the beautifully adorned GUEREZA. This monkey presents a singular example of contrast in colors. The back, shoulders, the crown of the head, the limbs, and part of the tail, are black. But along the sides, the black hairs have hardly run a fifth of their course, when they suddenly become of a pure white. This change is not effected by a gradual melting of the black into white, but the line of demarcation is clearly defined.

URSINE COLOBUS.—*Colobus ursinus.* BLACK COLOBUS.—*Colobus satanas.*

There is also a fringe of white hairs that encircles the cheeks, and becoming suddenly very narrow, runs across the forehead, just above the eyes, and is boldly contrasted with the black face and black scalp. The tail ends in a whitish tuft, but not so large as that of the Ursine Colobus, nor so purely white.

Very little is known of the habits of this animal, but it is said to be a gentle creature, feeding on insects as well as on the usual vegetable food for monkeys.

It is a native of Abyssinia, and its name "Guereza" is its Abyssinian title.

The beauty of its fur causes it to be much sought after by the natives of the country, who make its skin into coverings for the curiously shaped shields which they bear. The white fringe is the part that is chiefly valued, and its appearance on a shield points out at once a person of distinction in its bearer.

We now arrive at a group of small monkeys, with exceedingly long names. The term "Cercopithécus" is composed from two Greek words, signifying "tailed ape."

The monkeys belonging to this genus are very abundant in their native forests, and the unfortunate peripatetic monkeys that parade the streets in tormenting company with barrel organs, or seated on the backs of dejected and pensive bears, are mostly members of this group.

The first glance at one of these monkeys will detect a peculiar sheen of the fur, that bewilders the eye and conceals the precise color. If, however, the hairs are examined separately, each hair will be found to be varied in color several times, black and yellow being the principal colors. First the hair will be black for a part of its length, then yellow, then black again, and so on to the tip. As the black has something of a bluish tinge in it, the mixture of the yellow and blue gives an undefined greenish hue, as to cause the name of Green Monkey to be given to the animal.

The Cercopitheci are remarkable for the singularly large development of the cheek pouches, which seem to possess an illimitable power of extension, and to accumulate a strange medley of articles. Supply one of these monkeys with nuts or biscuit, and he will contrive to put the greater part of the food into his cheek pouches, only eating a small portion at the time.

GUEREZA.—*Colobus guereza.*

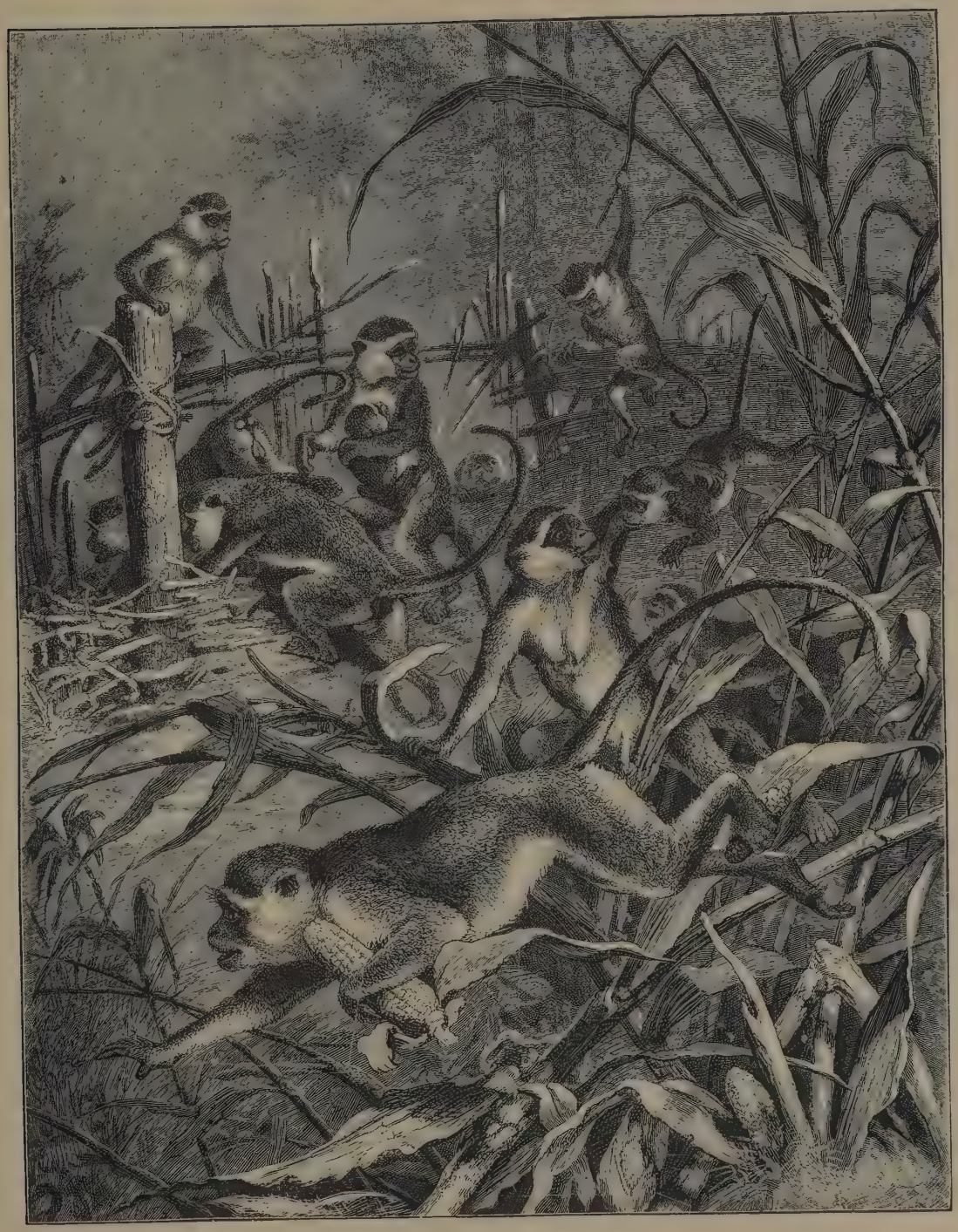
I never knew but one instance when the pouches were quite full, and even then the monkey was a small one, and the nuts were large. The little creature was liberally gifted with nuts, with the special purpose of ascertaining the capabilities of the pouches, and after dilating its cheeks to a wonderful extent with large "cob" nuts, it was at last compelled to empty them into its hands.

These pouches have been aptly compared to the stomach of a ruminant animal, and are employed in much the same manner. By means of the possession of these natural cupboards, the monkey is enabled to make little incursions, to eat as much food as hunger demands, and to carry away sufficient nourishment for one or two meals more, without being embarrassed in its retreat by its burden.

It is worth notice that the word "monkey" is derived from the name of this group, the Mona. The diminutive of Mona is Monikin, the transition from which word to our "monkey" is sufficiently evident.

The GRIVET, or TOTA, as it is called by some writers, is of a sombre green color; the green being produced, as has been already mentioned, by the black and yellow hair. The limbs and tail are of a grayer tint than the rest of the body, the yellow portion of the hair being changed to a dull white. The inside of the limbs and the abdomen are slightly tinged with white. In the male animal the canine teeth are rather protuberant, showing themselves beyond the lips. The naked skin of the face, ears, and palms, is black, dashed with that deep violet hue that is found in so many of the monkeys. At each side of the head, the white hairs stand out boldly, whisker fashion, and give a very lively character to the head. It is an African animal, and common in Abyssinia.

The GREEN MONKEY, is sometimes called the Callithrix, or Beautiful-haired Monkey, on account of the exquisitely delicate marking of each separate hair. The inside of the limbs is



GREEN MONKEYS.

nearly white, as is the under surface of the body, and the outer side of the limbs takes a grayish tinge. The hairy fringe that grows over the side of the face is of a delicate golden yellow.

This monkey is a native of Senegal and the neighboring parts, and is frequently brought to this country.

The VERVET is rather a variable animal in point of color, some specimens being decidedly pale, while others assume a blackish hue. In general, the color of the animal is as follows. The prevailing tint of the fur is much the same as that of the Grivet, to which animal the Vervet bears a strong resemblance. The head, the throat, and breast, are of a light dun, the paws being very dark. In the male Vervet the canines are rather long, and show their points beyond the lips.

These little animals are extremely abundant in their native land, and in Senegal especially are seen among the branches in immense troops. They seem to feel their own dignity as masters of the wood, and are aggrieved by the intrusion of human beings into their special domains. They are so agile and swift in their movements, and withal so quick of sight, that they almost invariably descry an intruder before themselves are visible. There may be hundreds of little heads peering through the branches of the very tree under which the traveller is seated, and double the number of sharp little eyes glittering among the foliage; but their owners are so lithe and cautious, that their presence remains undiscovered until they choose to announce themselves in their own fashion.

Monkeys have their code of etiquette as well as men; and, as they do not possess cards, the correct mode in which a monkey announces its presence to a human visitor is by dropping a piece of stick upon him. Perhaps he may consider the stick to be only a twig fallen in the course of nature, and so take no notice of it. Down comes another stick, and if that does not cause him to look up, several more are let fall upon him until his attention is drawn to the assembly in the branches.

This point having been gained, the next object is to let the intruder know that his company is undesirable, and that the sooner he takes his departure the more agreeable it will be for all parties.

That the long-tailed party are averse to so big an animal without an inch of tail, is clearly shown by the angry chattering that is set up, and the double rows of white and sharp teeth that are freely exhibited; and that the position of the objectionable individual will become anything but agreeable, is practically proved by the riot among the branches, which are shaken with noisy violence, the constant cries and chattering, and the shower of sticks and various missiles that pour upon him from above. Whether the object of their dislike be armed or not, seems to make but little difference to these tetchy animals. Should he retreat from so unpleasant a proximity, well and good—they have achieved their point, and satisfied their pride of place. Should he retaliate, and hurl deadly leaden missiles among his persecutors in exchange for the harmless but disagreeable assaults committed on himself, they sullenly receive his fire, unterrified by the fall of their slaughtered companions, and, even when wounded, continue the unequal conflict. They evidently feel themselves in the right, and refuse to abandon their position. One traveller who had been thus treated by the monkeys, killed twenty-three of the poor animals in less than an hour—not much to his credit.

Killing a monkey is always a pitiful business, for it is so much like an act of murder committed on a human being. Many are the travellers who, urged either by anger, curiosity, scientific researches, or innate destructiveness, have destroyed these animals, and have been so stricken by remorse at the effect of their cruelty, that they have vowed never to kill another monkey as long as they lived. There are several most touching narratives of such scenes, but they are so trying to the feelings, that I can neither bring myself to write them, nor to inflict such tragical tales on my readers. It were much to be wished that men could read the effects of their cruelty in the eyes of other animals except the monkeys, and would bind themselves never to inflict one unnecessary pang upon any living creature. Surely no wounded monkey could look at its tormentor with more pitiful eyes than those of the over-laden and over-driven ass, or even the neglected and ill-treated dog. These latter animals, too, are always with us, and need not only the cessation of actual cruelty, but even the gift of human sympathies,

before they can take their proper place in creation, and become the true servants and companions of man. It rests with man, who gave names to all living beings, to complete the work which God began in making them, and by stooping from his own superior nature, to be a protecting and loving providence to the beings that are placed under him. By so doing, man draws out, fosters, and develops the better nature which is inherent in every animal, and which would remain concealed, like a seed in ice-bound soil, unless it were brought into vigorous life by the genial influence of a higher being. I cannot believe that any animal is utterly untameable, and so totally brutish as to be insensible to the touch of kindness. There are many animals which are proof against the old-fashioned way of education, and which are only rendered more fierce and obstinate by the tortures and blows which were formerly so freely bestowed on animals in course of training. But these very animals have proved to be sensitive to gentle and kind treatment, and, though fierce and savage towards one who only approached in order to torment, became docile and subdued when in the hands of a tender and sympathetic owner.

The same rule holds good with human beings: and the great and beautiful truth becomes daily more apparent, that severity of punishment has an injurious rather than a beneficial effect, and that the only true rule is that of love.

The Grivets and Vervets are frequent visitors to our land; and being extremely inquisitive in character, as well as active in body, play strange pranks in their land of exile. One of these creatures which resided in London some few years ago, caused considerable annoyance to his neighbors, one of whom very kindly favored me with the following account of some of his misdemeanors.

"A few years ago, we lived next door to a lady who had a pet monkey, which was one of the most imitative and mischievous little beings that ever existed. His imitative nature caused the servants so much trouble, that he had not a friend among those of his own house.

"One day he observed the ladies'-maid washing her mistresses' lace; and his offers of assistance having been somewhat roughly repulsed by her, chattering and scolding he went forth in search of adventures. Unfortunately, my windows were invitingly open, and he entered, with the idea of washing fresh in his head.

"His spirit of curiosity induced him to open two small drawers, from which he abstracted their whole contents, consisting of lace, ribbons, and handkerchiefs. He placed these things in a foot-pan, together with all the water and soap that happened to be in the room, and he must then have washed away with great vigor; for when I returned to my room, after an absence of an hour or so, to my astonishment, I found him busily engaged in his laundry operations, spreading the torn and disfigured remnants to dry. He was well aware that he was doing wrong, for without my speaking to him, he made off the moment he saw me, going very quickly and hiding himself in the case of the kitchen clock in his own home.

"By this act, the servants knew he had been doing mischief, as this was his place of refuge when he was in trouble or disgrace.

"One day he watched the cook while she was preparing some partridges for dinner, and I suppose that in his own mind he considered that all birds ought to be so treated, for he managed to get into the yard where his mistress kept a few pet bantam fowls, and after robbing them of their eggs, he secured one of the poor hens, with which he proceeded to the kitchen, and then commenced plucking it. The noise that the poor bird made brought some of the servants to the rescue, but they found it in such a pitiful and bleeding state, that in mercy it was at once killed.

"After this outrageous act, Mr. Monkey was chained up, which humiliated him so much that he steadily refused his food, and soon died."

Monkey flesh forms a favorite article of food with the human inhabitants of the same country, and is said to be tolerably good eating, though extremely dry and sapless. Part of this fault seems, however, to lie with the very primitive style of cooking which is prevalent in those regions, and which is achieved by running a sharp stake through the animal's body, and letting it roast before the fire.

Europeans find a difficulty in accustoming themselves to the sight of broiled monkey; for

it presents an appearance so unpleasantly suggestive of a toasted child, that horrid ideas of cannibalism arise in the mind, and even a stomach sharpened by hunger revolts from the unsightly banquet.

The well-known Mona monkey belongs to the same genus as the foregoing animals. All the long-tailed African monkeys are termed Monas by the Moors. On account of its green, maroon, gray, and white fur, it is sometimes called the Variegated Monkey. Little is known of its habits in a state of nature, and accounts of its captive character vary as much as is usually found in similar cases. On the authority of one writer, who speaks from personal experience, we are told that the adult Mona is savage and irritable; while another, who also writes from personal observation, tells us that the Mona is gentle, and devoid of petulance or malice, its excellent disposition remaining unaltered by age.

THE PATAS.—*Cercopithecus ruber.*

One of these animals, which passed several years in Europe, was remarkable for its amiable temper; and although by no means free from the little mischievous and pilfering habits that are so inextricably interwoven in the monkey nature, was so quiet and gentle as to be left at perfect liberty. He was an adept at unlocking boxes and examining their contents, could unravel the intricacies of a knot, and was possessed of a hand dexterous and nimble at picking pockets. The last-named occupation seemed to afford peculiar gratification, which was increased by the fact that his visitors were accustomed to carry nuts, cakes, and other delicacies in their pockets, on purpose for the monkey to find them there.

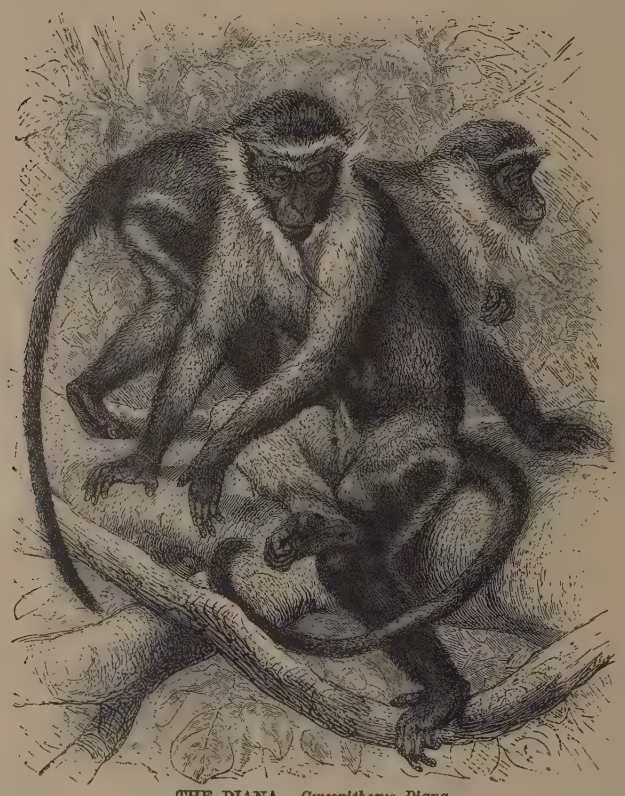
Many specimens of this animal have been brought to Europe, and their disposition seems to vary according to the temperament of their owner. Monkeys are very sensitive animals, and take much of their tone of character from that of the person with whom they are most familiar.

They seem to be affected almost instantaneously by predilection or antipathy, and on their first interview with a stranger, will evince either a satisfaction at, or objection to, his presence, which they will maintain for ever afterwards. I have often watched this propensity, and seen the same animal come voluntarily and offer itself to be caressed by one person, while the very approach of another would set it chattering with anger. It may be that the animal is actuated simply by caprice; but the more rational mode of accounting for such an action, is to suppose that the fine instincts which are implanted in its nature, enable it to discover its true friends at a glance without the trouble of testing them.

The PATAS, sometimes called the Red Monkey, on account of the ruddy color of the hair, is of a bright chestnut, or fawn color, with a deep shading of red. This hue is shown very decidedly on the sides and on the outer portions of the hind legs, the legs themselves being of a darkish cream color. The breast and the fore-limbs are covered with hair, which much resembles that of the Green Monkey.

It is an inhabitant of Western Africa, being found very commonly in Senegal. In size it is much superior to the last-mentioned animal, reaching more than three feet in length.

When left to an undisturbed life, these creatures are playful and inquisitive, but mischievous and spiteful withal. They display great courage when engaged in a fray, and if their size and strength were proportionate to their bravery and endurance, would be truly formidable antagonists. Even the fall of their comrades only seems to redouble their rage, and to stimulate them to increased exertions.



THE DIANA.—*Cercopithecus Diana.*

Too crafty to venture upon close combat, these monkeys retain their posts of vantage on the tree-tops, and hurling from thence every kind of offensive missile that can be procured, render their attack a matter of exceeding inconvenience, even to armed men. During the skirmish, the monkeys distort their features into strange grimaces, and rend the air with their cries of rage. They have been known to follow boats up the course of a river, keeping pace upon the overhanging trees, and becoming so troublesome from the constant shower of sticks, fruits, and other missiles, that the occupants of the boats were forced to fire at their assailants, and to kill many of the number before they could be freed from the annoyance.

This, as well as the foregoing long-tailed monkeys, belongs to that large group of quadrumanous animals called the GUENONS, nearly all of which possess similar characteristics of disposition. They are amusing and playful creatures, very active, and move with much grace of deportment. In captivity they are remarkable for their mercurial temperament, their ingenuity in devising and executing small malevolent pranks, and their insatiable appetite for nuts, and other similar dainties. They are curiously sensitive to ridicule, being thrown into furious excitement by any mocking gestures or sounds. Nothing seems to irritate a monkey more than a grin and a chatter, in imitation of its own habits. It will fly at the offender with furious looks and screams of rage, and, unless restrained by chains or bars, would be likely to inflict some damage by its sharp teeth. It will remember the person of its tormentor with singular tenacity of memory, and will ever after be thrown into a state of angry agitation by the sound of the hated voice.

Although rather tetchy and hot-tempered, and too apt to resent any supposed slight or injury, the Guenons are very capable of education, and in the hands of a kind and gentle teacher can be trained to perform many curious feats. Severity defeats its own aim, and only makes the creature fall back upon the innate obstinacy which is inherent in most animals, and of which the monkey has a large share. But a kind instructor, and one who will never lose his own temper, may take in hand even a savage monkey and reduce it to gentle obedience.

As a general rule, the male monkeys are less open to higher influences than the females, and are therefore more difficult subjects for the trainer.

Nearly all the long-tailed monkeys that come to us belong to the Guenons, and the many anecdotes that are related of them may be safely attributed to this group of animals.

The monkey which is known by the name of the DIANA is remarkable not only for its quaint aspect, but for the richly variegated tints with which its fur is adorned. The most conspicuous feature in the Diana Monkey, is the long and sharply pointed beard which decorates its chin and face. The color of the beard is a pure white, and the animal is extremely solicitous about the perfect spotlessness of its hue, taking every precaution to preserve the cherished ornament from stain. So careful is this monkey, that when it drinks it holds back its beard with one hand, lest it should dip into the liquid and be soiled.

It may seem rather singular that an animal which bears so masculine an adornment should be named after the bright virgin huntress of mythology, radiant in her perpetual youth. But though as Diana the beard might be scarcely appropriate, yet as Hecate it would not be so very inconsistent. The reason, however, for giving to this monkey the title of the Diana, may be found not on the chin but on the forehead: where a semi-lunar line of white hair gleams out conspicuously against the black brows, and bears a close resemblance to the silvery crescent borne by the Diana of the ancients.

The coloring of the fur is extremely diversified, and in several parts assumes a force and richness of tint that we should rather expect in the plumage of a bird than in the fur of a monkey. The back is mostly of a deep chestnut color, and is relieved by a bright orange hue that covers the lower part of the abdomen and the inside of the thighs. The orange color is very much the same as that of the well-known penguin feathers which are so extensively used for slippers, pouches, and other fanciful articles.

A band of pure white separates the chestnut from the orange, and serves to set them off to great advantage. The remainder of the body is of a rather dark gray, and the hands are nearly black. The color of the eye is a clear gray.

In captivity it is rather a pleasing animal; almost fastidiously clean in habits, therein exhibiting an advantageous contrast to many of the monkey tribe. It is easily tamed, and walks deliberately forward to receive any gift at the hands of its visitors. When walking, its diverse colors produce a curious effect, especially when it is viewed from behind.

Although it is by no means a rare species, and is found in plenty in Guinea, Congo, and other places, it is not so often imported as might be expected. The total length of tail and body is about four feet and a half, of which the tail occupies rather more than the moiety.

There are several species of monkeys belonging to the genus Cercocebus (*i. e. Tailed Monkey*), of which the animal that is so well depicted in the accompanying illustration is a good type. The Mangabeys, as these monkeys are called, are all inhabitants of Western Africa. They are amusing in their habits, and gentle in manner; easily domesticated, and open to instruction. Their temper does not seem to be so irritable as that of many monkeys; and even when they are roused to anger, their ire is comparatively evanescent.

On account of the white hue which marks the eyelids, the Mangabeys are sometimes termed the "White-eyelid Monkeys." The Sooty Mangabey is well named; for its general color is nearly black, something like a half-tint chimney-sweeper. The black hue is only found in the adult animal, the color of the young Mangabey being a fawn tint. Sometimes it goes by the name of the Negro Monkey; and under these several titles suffers somewhat from the confusion that is almost inseparable from such uncertain nomenclature. It is rather a small animal, measuring some eighteen inches or so from the nose to the root of the tail, which occupies about the same space.

Among the peculiar habits which distinguish the Mangabeys, we may especially notice the action of their lips, and the mode in which they carry the tail. They have a strange way of writhing their faces into a kind of quaint grin, in which they raise the lips, and exhibit the teeth almost as if they were laughing. When walking, they have a fashion of turning their tails over their backs, and carrying them reversed, in a line almost parallel with the direction of the spine.

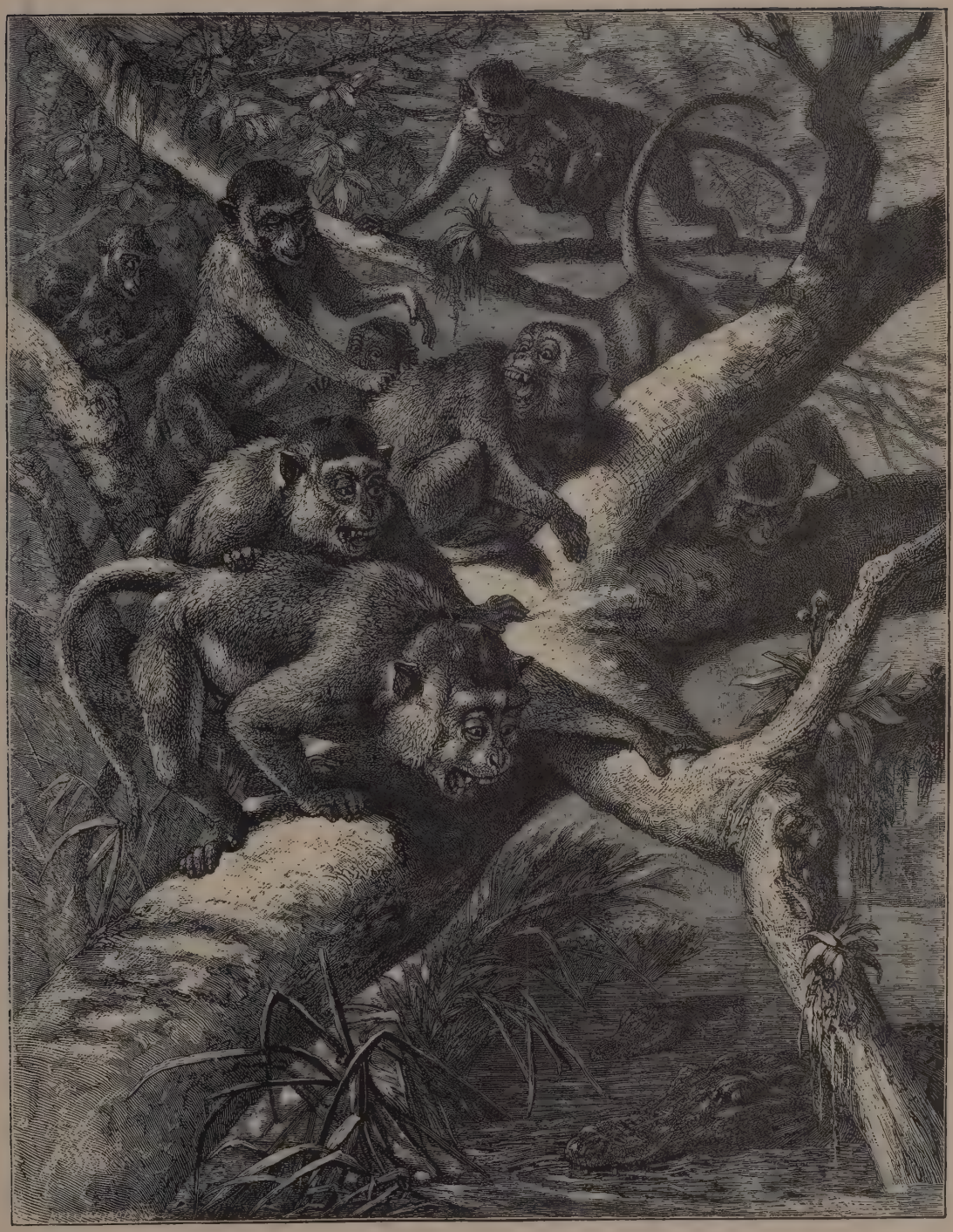
Few monkeys can assume more *outré* attitudes than the Mangabeys, which seem to be, among monkeys, almost the analogues of the acrobats among mankind; and twist themselves into such strange contortions, that they seem to be able to dispense with the bones and joints with which other animals are furnished. They seem to be quite aware of their own accomplishments, and soon learn that their display will bring in a supply of nuts, cakes, and fruit to their exchequer. So they keep a vigilant eye on the visitors, and when they conceive that they have drawn attention to themselves, they execute a series of agile gambols, in the hope of meeting the reward which sweetens labor.

THE SOOTY MANGABEY.—*Cercocēbus fuliginōsus.*

Their attention is soon excited by any object that is more than ordinarily glittering; jewelry of all kinds being as magnets, to which their eyes and fingers are instinctively drawn. My own fingers have more than once been endangered by the exceeding zeal manifested by the animal in its attempts to secure a ring to which it had taken a sudden liking. The monkey held out its paw as if it wanted to shake hands, seized my fingers with both its hands, and did its best to remove the object of its curiosity; fortunately, the ring fitted rather tightly, or it would probably have been lost or swallowed. As it was, a few scratches on my hands, and an outburst of disappointed anger on the part of the monkey, were the only results of the sudden attack.

MACAQUES.

THE various species of monkeys which are ranged under the common title of Macaques, are mostly well-known animals; being plentiful in their native lands, and frequently domesticated, both in their own and in foreign countries. They are all inhabitants of Asia, although



KRA, OR DOG-LIKE MACAQUE.

the word Macaco is the name which is given to all kinds of quadrumanous animals on the coast of Guinea, and is almost synonymous with our own word monkey.

One of the best typical examples of this genus is found in the BONNET MACAQUE, or

MACAQUES.

MUNGA, as it is often called. A native of Bengal and Ceylon, it is a frequent visitor to our shores; being tolerably hardy in constitution, bearing the long voyage well, and suffering less from our insular climate than many of the monkey tribe.

For the title of Bonnet it is indebted to the peculiar arrangement of the hairs on the crown of the head, which radiate in such a manner that they seem to form a kind of cap or bonnet.

The general color of the animal is a rather bright olive-grey, fading into white beneath. The skin of the face is of a leathery flesh color.

The distinctions between the Macaques and the Cercopitheci, are not very striking; but by comparison of the two genera, sufficiently decided variations are visible. These are rather comparative than absolute. In the Macaques, the muzzle is slightly more solid than in the Guenons, the body and head are larger, and in most species the tail is shorter. The callosities are well marked, and in some instances are rendered more conspicuous by a surrounding fold of skin devoid of hair. The limbs, too, are more muscular than those of the Guenons. These peculiarities may be seen on reference to the illustration.

Whether the fault lies with its proprietor, or whether the temper of this Macaque be really uncertain, is difficult to say; but its general disposition when in captivity is rather of a snappish and crabbed character. Those who have had much to do with the Munga, say that it is very capricious, and that its good humor cannot be depended upon, as is the case with many domesticated monkeys.

In its native land, the Munga enjoys exemption from most of the external ills to which monkey nature is liable; for, in common with several other species, it is piously protected by the natives, on account of its importance in their myriad-deitied religion. Not content with permitting these monkeys to devastate his plantations at will, the devout Hindoo prepares a home for them in his temple, where they rule supreme, and tolerate not the intrusion of any monkeys of another caste. When old, they are of a very high caste indeed, according to the Hindoo ideas on the subject. The more fierce and savage the monkey, the higher is its caste; and among serpents, the cobra is significantly the Brahmin.

The RHESUS, or BHUNDER MONKEY, is rather a handsome animal in point of color; the usual olive-green and yellow being relieved by warmer tints of a very bright chestnut, almost amounting to orange. The back is of a brownish hue, while the lower part of the spine and the outside of the thighs is of the warm tint already mentioned. The arms and shoulders are lighter, and change to dun below. The eye is of a light brown color.

As will be seen in the engraving, the Rhesus is of a short and sturdy make, and looks more like an ordinary quadruped than any of the preceding monkeys. The tail, too, is very short, and the callosities are very conspicuous; more on account of their ruddy color, than their size.

For cool impudence and audacity, this monkey stands unrivalled among its congeners; surpassing even the previous animal in both these characteristics.

So excellent and spirited a description has been given by Captain Johnson, of these monkeys in their wild state, that I cannot do better than present his account in his own words.

"At Bindrabun (which name, I imagine, was originally Baunder-bund, literally signifying a jungle of monkeys), a town only a few miles distant from the holy city of Muttra, more than a hundred gardens are well cultivated with all kinds of fruit, solely for the support of these animals, which are kept up and maintained by religious endowments from rich natives.

"When I was passing through a street in Bindrabun, an old monkey came down to the lower branches of a tree we were going under, and pulled off my Harcarrah's turban, as he was running in front of the palanquin, decamped with it over some houses where it was impossible to follow him, and was not again seen.

"I once resided a month in that town, occupying a large house on the banks of the river, belonging to a rich native; it had no doors, and the monkeys frequently came into the room where we were sitting, carrying off bread and other things from the breakfast-table. If we were sleeping or sitting in a corner of the room, they would ransack every other part.

"I often feigned sleep, to observe their manœuvres, and the caution with which they proceeded to examine everything. I was much amused to see their sagacity and alertness. They would often spring twelve or fifteen feet from the house to another, with one, sometimes two young ones under their bellies, carrying with them also, a loaf of bread, some sugar, or other article; and to have seen the care they always took of their young would have been a good lesson to many mothers.

"I was one of a party at Teekarry, in the Bahar district; our tents were pitched in a large mango garden, and our horses were picketed in the same garden at a little distance off.

When we were at dinner, a Syce came to us, complaining that some of the horses had broken loose, in consequence of being frightened by monkeys on the trees; that, with their chattering and breaking off the dry branches in leaping about, the rest would also get loose, if they were not driven away.

"As soon as dinner was over, I went out with my gun to drive them off, and I fired with small shot at one of them, which instantly ran down to the lowest branch of the tree, as if he were going to fly at me, stopped suddenly, and coolly put its paw to the part wounded, covered with blood, and held it out for me to see: I was so much hurt at the time, that it has left an impression never to be effaced, and I have never since fired a gun at any of the tribe.

RHESUS, OR BHUNDER MONKEY.—*Macacus rhesus.*

"Almost immediately on my return to the party, before I had fully described what had passed, a Syce came to inform us that the monkey was dead; we ordered the Syce to bring it to us, but by the time he returned, the other monkeys had carried the dead one off, and none of them could anywhere be seen.

"I have been informed by a gentleman of great respectability, on whose veracity I can rely (as he is not the least given to relating wonderful stories), that in the district of Cooch-Bahar, a very large tract of land is actually considered by the inhabitants to belong to a tribe of monkeys inhabiting the hills near it; and when the natives cut their different kinds of grain, they always leave about a tenth part piled in heaps for the monkeys. And as soon as their portion is marked out, they come down from the hills in a large body, and carry all that is allotted for them to the hills, storing it under and between rocks, in such a manner as to prevent vermin from destroying it.

"On this grain they chiefly live; and the natives assert, that if they were not to have their due proportion, in another year they would not allow a single grain to become ripe, but would destroy it when green. In this account, perhaps, superstition has its full influence."

The natives are nearly as careful of the Rhesus, as of the Hoonuman itself; and take sanguinary revenge on any one who wounds or kills one of these animals. On one occasion, two officers, together with their servant, lost their lives in a popular tumult caused by the

death of a monkey, at which they had thoughtlessly fired. But although the monkeys may not be hurt, and are allowed to plunder the crops at their own sweet will, the Hindoo cultivators are by no means pleased to see their fields so often devastated, and would willingly preserve them from the depredators in spite of their divine, though thievish character.

To drive away the monkeys is almost an impossible act on the part of the native proprietor; for the monkeys consider themselves as quite on an equality with any dark-skinned human being, and decline to move an inch. So the only resource is to beg a European to undertake the task; and the monkeys, knowing that a white man is not so scrupulous as a black one, take the hint, and move off.

One ready-witted gentleman succeeded in keeping the monkeys away from his plantation for more than two years, and that without using any violence, or offending the prejudices of the natives.

He had planted a patch of sugar-canes, and had seen his growing crops eaten by elephants, swine, deer, monkeys and other animals, without being able to guard the ground from the robbers. The heavier animals he excluded by means of a deep trench surrounding the cane-patch, and a strong palisading of bamboos just within the ditch. But the monkeys cared nothing for moat or wall, and carried off whole canes in their hands, eating them complacently as they proceeded to the shelter of the trees.

For a long time this state of things continued, and the planter was doomed to see the ripening canes devoured in his very presence, and the chewed fragments spit in his face by the robbers. This last insult proved too great a strain for his patience to endure, and after some thought, he hit upon a stratagem which answered even beyond his expectation.

He chased a flock of the monkeys into a tree, which he then felled; and by the help of his assistants, captured a number of the young, which he conveyed home.

He then mixed some treacle with as much tartar-emetic as could be spared from the store, and after painting all the young monkeys with this treacherous mixture set them free. Their anxious parents had been watching for their offspring, and carried them away out of danger. The liberated captives were then surrounded by the whole troop, who commenced licking the treacle from their fur. Before very long, the expected effects made their appearance, and the poor monkeys presented a most pitiful appearance.

The result of the affair was, that the monkeys were so terrified at the internal anguish which their depredations had caused them to suffer, that they fled the place, and not a monkey was seen in that locality until long afterwards.

In captivity they are most mischievous, and are always on the watch for an opportunity of exhibiting a little malice.

They tear pieces out of the dress of anybody who may happen to approach near their cage; they snatch at any ornament that strikes their quick eyes; they grin and chatter with exultation when they succeed in their mischief, and scream with rage when they are foiled. They prefer to exercise these abilities on human sufferers; but in default of man, whom they consider their legitimate game, they are not above playing practical jokes upon each other, and, better still, upon the inhabitants of neighboring cages.

Some are of so jealous a disposition that the sight of another monkey eating a nut will throw them into a state of angry irritation, which is not always pacified even by the gift of a similar or even a better article.

The skin of this monkey is very loose about the throat and abdomen, and generally hangs in folds.

The animal which is shown in the accompanying engraving is one of the best known of the monkey tribe; as it is tolerably hardy, it endures the changeable and chilly European climates better than most of its race.

As its name implies, it is a native of Barbary, where it is found in great numbers, but has also been naturalized upon the rock of Gibraltar. The Gibraltar MAGOTS are frequently mentioned in books of travel, and display great ingenuity in avoiding pursuit and discovering food. They keep to the most inaccessible portions of the rock, and scamper away hurriedly on the

slightest alarm. But with the aid of a moderately good telescope, their movements may be watched, and are very amusing.

When in their native wilds, the Magots live in large flocks, each band seeming to be under the orders of some chosen leader. They are very intelligent, and possessed of a large share of the cunning that belongs to the monkeys, and which, when aided by their strength of muscle, agility of limb, and quickness of sight, keeps them in tolerable security from foes, and enables them to make raids upon cultivated lands without suffering the penalty due to their crimes.

The enemies which these creatures hold in greatest dread are the climbing felidæ; and on the approach of one of these animals, the colony is instantly in a turmoil. The leaders yell

MAGOT, OR BARBARY APE.—*Inuus ecaudatus.*

their cry of alarm and give the signal for retreat, the mothers snatch up their little ones, the powerful males range themselves in battle array, and the whole body seeks a place of refuge.

Open attacks are little feared by the Magots, as their combined forces are sufficiently powerful to repel almost any enemy. But at night, when they are quietly sleeping, the crafty foe comes stealing along, and climbing up the trees or rocks on which the Magots are sitting asleep, strikes down its unsuspecting prey.

When young, the Magot is tolerably gentle; and as it is sufficiently intelligent to learn many tricks, it is frequently brought to Europe, and its accomplishments exhibited before the public. But this state of comparative domesticity is only for a time, and as the bodily frame becomes more developed, so does the Magot lose its gentle nature, and put on a sullen and fierce deportment. Captivity seems to exert a terribly depressing influence over the animal as soon as it becomes fitted by nature for its wild independence; and as the stimulus to the mind is removed by the restrictions under which the animal is placed, the mind loses its spring, and the creature is deserted by the apt intelligence that characterizes its wild state, and for which it has no need in its hopeless thraldrom.

This monkey is not very widely spread, for with the exception of the Rock of Gibraltar, it seems to be confined to Northern Africa. Some authors state that it is found in India, China, and even the entire African continent, but it seems clear that there has been some

confusion of species. Indeed, the Magot has caused some little labor in placing it in its right position.

It is not a very large animal, as the full-grown males only measure about a yard in length, and the females are rather smaller. The general size of the Magot is about that of an ordinary bull-terrier dog.

The color of the fur is tolerably uniform, differing chiefly in depth of shade, and is of a clear grayish color. The head is strong and heavy, the eyes deeply set under the overhanging brows, the neck is short and powerful, the teeth are fully developed and sharp, the finger-nails are sufficiently strong to inflict a severe wound; so that the entire aspect of an adult male Magot is that of a fierce and dangerous animal.

Its walk on level ground is rather awkward, this animal making use of feet and hands for that purpose; but it climbs with ease and agility up trees or rocks, and in a domesticated state is fond of running up and down ropes, and swinging itself about its cage.

In captivity it will eat almost any kind of food, but in its wild state it prefers fruit, leaves and other vegetable fare, varying its diet by sundry insects which it captures. When enraged it utters a fierce harsh yell, which, when enhanced by the force of numbers, the fury-flashing eyes and warlike gestures, often suffices to intimidate a foe from venturing upon an attack. But when it is not under the influence of angry feelings, its voice is comparatively mild and gentle, being a soft and almost caressing chatter.

There is a strange grimace in which this animal habitually indulges on almost every emotion, whether it be caused by pleasure, anger, or disappointment. The cheeks are sucked in, the lips are contracted over the gums, and the teeth are freely exhibited.

Although it is popularly termed the Barbary Ape, the Magot is not a true ape, being organized after a very different fashion from the veritable Simians. Belonging to the same genus as the Munga and Rhesus, it is almost entirely destitute of the tail which is so conspicuous an adornment of these monkeys. In the Magot the tail is reduced to a mere projection, sufficient to mark the spot where that member would have been placed, but not prominent enough to be ranked among real tails. Owing to this formation, the Magot, although one of the Macaques, was placed among the apes by earlier naturalists.

When at liberty in its native lands, the Magot has a great predilection for hunting scorpions, insects, and similar creatures, and devouring them on the spot. It displays peculiar aptitude for discovering and pouncing upon its prey.

Scorpions and beetles are found in profusion under stones, logs, or in similar sheltering places, and are there secure from any ordinary foe. But the quick senses of the Magot detect them in their concealment, and the ready hands sweep away the shelter and make the insect prisoner before it recovers the sudden surprise of its violated roof. On the rock of Gibraltar these monkeys are constantly engaged in turning over the loose stones, and by their perpetual industry have, in course of years, quite altered the surface of the earth, affording, it may be, grounds for sore perplexity in the minds of future geologists.

To any ordinary animal the scorpion would be rather a dangerous prey, and would probably avenge its death most fully by a stroke of its torture-giving and swiftly-lashing tail. The Magot, however, has hands which can overmatch even the scorpion's tail, and no sooner is one of these baneful creatures brought to light, than the monkey pounces upon it, twitches off the poison-joints of the tail, and then, grasping the disarmed scorpion, eats it as composedly as if it were a carrot.

In default of such large insects as have been mentioned, the Magot turns its attention to smaller deer, and entering into a mutual engagement with a friend of its own race, they reciprocally exterminate the parasitic insects with which monkeys generally swarm.

Small though the quarry may be, the Magot displays much excitement in the chase, and after running down its prey successfully, holds the captured insect to its eyes, contemplates it with a grimace of satisfaction, and then daintily eats it. When in captivity it continues the same pursuits, and may often be seen nestling close to a friendly cat or dog, busily engaged in a minute investigation of its fur, and ever and anon giving vent to a little complacent chuckle which proclaims a successful chase. Sometimes the Magot contracts a strong friendship for

its master, and being desirous to render every service in its power, jumps on his shoulder, and examines his head with much care, though, we may hope, with little ultimate satisfaction.

It often happens that the domesticated Magot takes a fancy for some other animals that may chance to come in its way, especially if they are young and comparatively helpless. It then acts as a voluntary nurse, and performs sundry kind offices for its charge, carrying them about with it, and, like nurses in general, becomes horribly jealous if its authority be in the least infringed.

Its attitudes are rather singular. When walking or running, it goes chiefly on all-fours, but when it wishes to rest, it sits in a manner very similar to the corresponding attitude in man; when sleeping it generally lies extended at length, reclining on one side, or gathered up in a seated position, with its head drooping between its hind legs.

BLACK MACAQUE.—*Cynocephalus niger.*

In the absence of a tail, and in general form, the BLACK MACAQUE bears some resemblance to the Magot, but in color and arrangement of hair it is entirely distinct from that animal.

The tint of the fur is as deep a black as that of the Budeng, or Black Colobus, which has been mentioned before. Both these monkeys are possessed of crests which give a peculiar character to the whole aspect. That of the Black Colobus, however, is reverted forward, and curves to a point over the forehead, while that of the animal before us rises from the head and bends backward over the neck in a manner not unlike that of the cockatoo.

Like the Magot, the Black Macaque has been called an ape by some writers, and a baboon by others, on account of the apology for a tail with which its hinder quarters are terminated, but not decorated. It is an inhabitant of the Phillippines and the neighboring countries.

THERE are few races of animals which have not been impressed by their human superiors into their service. Although the bodily powers of man are often more limited than those of the inferior animals, yet the lofty human intellect can more than compensate for corporeal deficiencies by making use of these faculties which are possessed by the subservient creation.

Thus the Indian hunters take advantage of the active and stealthy chetah, to capture the prey which is too vigilant of sight and too active of foot to be approached by man.

In the bird-kingdom, the falcons take the place of the chetah, and chase through the realms of air those creatures whose wings would carry them beyond the grasp of man or the range of any weapon which he could devise.

Again, the otter and the cormorant are both employed for the capture of fish in their native element, although the one is a quadruped and the other a bird.

The ponderous strength of the elephant, and the drought-enduring powers of the camel, are equally utilized by man; and indeed, throughout the whole creation, whether of animate or inanimate bodies, there is perhaps no one object that cannot, either directly or indirectly, be converted to some human use.

Some there are, which are more directly profitable than others, among which may be enumerated the long list of domesticated animals which are familiar to us from childhood.

PIG-TAILED MACAQUE.—*Macacus nemestrinus.*

Many of these animals, such as the horse and the dog, are universally employed in all parts of the world, while others, such as the camel, are of no service except in the peculiar climate and among the peculiar circumstances for which they were created.

Among these latter animals is the monkey which is depicted in the engraving. This is the PIG-TAILED MACAQUE, sometimes called the BRUH.

An inhabitant of Sumatra and neighboring parts, the Bruh is possessed of the activity which distinguishes the monkey tribes, and withal is endowed with a larger share of intelligence than usual, even with the quadrumanous animals. The inhabitants of Sumatra are in the habit of capturing the Pig-tailed Macaque when young, and training it to climb the lofty cocoa-nut palms for the purpose of gathering the fruit. So clever are the monkeys, and so ingenious are the teachers, that the young scholars are instructed to select the matured nuts only, leaving the others to ripen on the tree. On this account, the Bruh has been called by a name which signifies the "fruit-gatherer."

In captivity it is generally an amusing animal, displaying to the full those traits of curiosity, impertinence, petty malice, and quaint humor, for which the monkeys are celebrated, enhanced by a spice of something that is not very far removed from wit.

I have often remarked the exceeding ingenuity of this animal in planning an attack on some unsuspecting person, its patience in biding its time, and its prompt rapidity of execution.

On one occasion, a young lady happened to pass near a cage where a pair of these animals were confined, and their attention was immediately drawn to some beautiful white feathers which she bore on her hat. Now, the monkeys were far too wise to betray the least emotion, and not even by a look did they show that they had even observed the objects on which their very hearts were fixed. But any one who knew the ways of monkeys could divine, by the sudden sparkle of the eye, that there was mischief brewing.

For some time, all went on as usual. The two monkeys held out their paws for nuts, cracked them, ate the sound kernels, and flung the bad nuts at the donors, just as if they had nothing on their minds, and had no soul above nuts. Interested by the amusing pranks which the creatures were playing, the owner of the feathers incautiously approached within reach of the cage.

Almost too quickly for the eye to follow, one of the Bruhs shot down the bars, and with a single adroit movement, whipped out one of the white feathers and leaped to the back of the cage.

Seating himself on the ground, he gravely inspected his prize, turning it over in every direction, smelling it critically, and biting off little strips of the feather, in order to ascertain the flavor. Having satisfied himself on these points, he stuck the feather behind one of his ears, so that it drooped over his head in ludicrous imitation of the manner in which it had been fastened into the hat. Thus accoutred, he paraded about the floor of the cage with stately pride.

His companion now thought himself entitled to some share in the booty, and, creeping up stealthily from behind, made a sudden spring at the feather. It was quite useless, for the original thief was on the alert, and, putting the feather in his mouth, climbed up a suspended rope with wonderful agility ; and in order to guard against an attack from below, he coiled up the rope with his hinder feet as fast as he ascended, thus cutting off all communication. When he reached the ceiling, he hitched his fingers and toes through the staple to which the rope was attached, and thus remained for awhile in perfect security.

However, even a monkey's limbs will not maintain their hold for ever, and the Bruh was forced to descend. His companion was waiting for him on the floor, and, when he reached the ground, gave chase, the two monkeys leaping about the cage, climbing the bars, and swinging from the ropes in the most agile manner.

At last they seemed to be tired of the game, and, sitting on one of the bars, amicably set to work at the feather, picking out each vane separately, nibbling it, and spurting the fragments on the floor.

Just at this juncture the keeper made his appearance at the door, and the very gleam of his cap was a signal for the delinquents to dive into the furthermost corner of their cage, out of reach of stick or whip. The feather was ultimately restored to its rightful owner, but as its shaft had been bitten nearly through, had lost many of its snowy vanes, and hung limp and flaccid, as if it had been mangled, there was but slight probability of its ever renewing its position upon hat or bonnet.

As to the depredators, they were incorrigible. Hardly had the excitement caused by the feather-robbery begun to subside, when a fresh storm of laughter and exclamations arose.

On my returning to the cage, the same monkey was seen perched on his bar examining leisurely a new prize in the shape of a bracelet, which he had snatched from the hand of a lady who was offering some biscuit. It was one of those bracelets that are composed of large beads, threaded on elastic cord, and the whole attention of the thief was absorbed in the amusement caused by drawing the bracelet to its full length, and letting it snap. The clatter of the beads seemed to amuse the monkey mightily, and he was so entirely charmed with this novel recreation, that he did not even see the approaching keeper. At the sound of his voice, however, down went beads, away went monkey, and the bracelet was soon in possession of its owner.

It was a very fortunate circumstance for the monkey that he was deprived of his prize. He would most certainly have pulled the bracelet until the string broke, and the beads fell on

the floor; and in that case, he would inevitably have swallowed every bead that had not been seized and eaten by his companion.

The floor of the cage was strewed with fragmentary trophies of the powers of these most mischievous creatures. There were scraps of ribbon, evidently torn from feminine wrists; there were odd fingers and thumbs of gloves, of every material and make; there were patches of various laces and light textures, which had once formed part of summer dresses; even to little pieces of slight walking-sticks, which had been seized and broken by the monkey in excusable avenging of insults offered by their bearers; — there were representative fragments of man, woman, and child, lying tossed about in admirable confusion.

WANDEROO.—*Silenus veter.*

I never knew so excellent a show of trophies, excepting in one instance, where several monkeys were confined in the same cage, and even in that case, I fancy that the superiority was simply occasioned by the less frequency with which the cage was swept. It is quite a common sight to see the skeleton of a parasol or two lying helplessly on the floor, or hung derisively from some bar or hook that is out of reach of any hand but that of the monkey.

Tassels of all kinds fall easy victims to the monkey's quick paw, and, after being well gnawed, are thrown contemptuously on the ground. The hard knob that is usually found in the upper part of a tassel irritates the monkey exceedingly. He thinks that he has found a nut concealed in the silken threads, and expends much time and labor in trying to crack it. The fine fibres of the silk annoy him wonderfully, and the air of angry vexation with which he spits out the obnoxious threads is highly amusing.

The fur of the Pig-tailed Macaque is tolerably uniform in its hue. The color of the greater part of the fur is a light fawn; a dark brown tint is washed over the top of the head and along the back, spreading partly over the sides, and coloring the upper surface of the tail. The under parts of the body and tail, together with the cheeks, are of a lighter tint.

The last of the Macaques which we shall notice in this work is the monkey which is well known under the name of WANDEROO, or OUANDEROO, as it is sometimes written.

Although the Wanderoo is by our best authorities considered to be a member of the Macaques, and is therefore placed among them in this work, some naturalists are more inclined to give it a place at the head of the Baboons, and assert that it forms the link between them and the Macaques.

To this decision they are led by the general physiognomy of this monkey, and by the fact that the extremity of the tail is furnished with a brush. Still, the muzzle is not of that brutal character which is so repulsively exhibited in the baboons, and the nostrils are situated in their ordinary position, instead of being pierced at the extremity of the muzzle.

The Indian name of this animal is "Nilbandar," or more properly "Neel-bhunder," the word being a composite one, and signifying a black Bhunder.

This very singular animal is a native of the East Indies, and is found commonly enough in Ceylon. The heavy mass of hair that surmounts the head and envelops the entire face, gives it a rather dignified aspect, reminding the observer of the huge peruke under whose learned

shade the great legal chiefs consider judgment. The hair on the top of the head is black, but the great beard that rolls down the face and beneath the chin is of a gray tint, as if blanched by the burden of many years. In some instances this beard is almost entirely white, and then the Wanderoo looks very venerable indeed.

It is not a very mischievous animal in its wild state, and withdraws itself from the habitations of men. When in captivity it is of a tetchy and capricious disposition, sometimes becoming mild in its demeanor, and presently, without the least apparent motive, bursting into a fit of passion, and indulging in all kinds of malicious tricks. But, as is the case with so many of the monkey tribe, as the creature becomes older, it loses the gentle part of its nature, and develops the brutality alone. Thus, a Wanderoo may be quiet, docile, and even affectionate at a year old, and appear quite a model of monkey nature; at two years of age the same animal will be full of lively caprice, at times playful, and at times cross and savage; while at full age, the creature will be surly, inert, savage, and revengeful.

From the form of the tail, which is of a moderate length, and decorated with a hairy tuft at its extremity, the Wanderoo is also known by the name of the Lion-tailed Baboon.

The greater part of the fur of this animal is of a fine black, but the color assumes a lighter hue on the breast and abdomen. The callosities on the hinder quarters are of a light pink.

It is not a very large animal, being rather less than three feet from the nose to the tip of the tail.

The name Silenus is appropriate enough, for the white beard and whiskers bear some resemblance to those facial ornaments attributed to the aged companion of the youthful Bacchus. And the specific title of "Veter," signifying "old," is well earned by the veteran aspect of the animal. The eye is a bright brown, and looks knowingly out of the hairy mass, from which it peers inquisitively at the bystanders.

Probably on account of the sapient mien, for which it is indebted to the mass of circumfluous locks, the Wanderoo is considered by the inhabitants to be a personage of great distinction among its own people. All other monkeys of the same land are said to pay the most profound reverence to their bearded chief, and, in his presence, to humble themselves as subjects before an emperor.

When feeding, the Wanderoo has a discreet custom of filling its cheek pouches before it begins to eat, thus laying up a provision against future emergencies before it has begun to satisfy the actual present wants of hunger. This habit presents a curious analogy with the peculiar stomach of the ruminating animals, when in the act of eating; a portion of the food passes into a series of pockets or pouches, where it is retained until the creature is possessed of time and leisure for re-mastication.

In its earlier youth, the Wanderoo is susceptible of education, and can be trained to perform many ingenious tricks, preferring those of a grave and sedate cast to the mercurial and erratic accomplishments displayed by the generality of learned monkeys.

BABOONS, OR DOG-HEADED MONKEYS.

A WELL-MARKED group of animals now comes before us, popularly known by the name of BABOONS. In more learned language they are entitled "Cynocéphali," or Dog-headed animals, on account of the formation of the head and jaws, which much resemble those of the dog tribe.

One distinguishing characteristic of these creatures is that the nostrils are situated at the extremity of the muzzle, instead of lying nearly flat upon its base, and just under the eyes, as in the apes, and other quadrumanous animals. The muzzle, too, is peculiar in its form, being, as it were, cut off abruptly, leaving a round and flattened extremity, which is well shown in the engraving of the Gelada, on p. 57. This extreme projection is not so conspicuous in the young baboon as when it attains a more mature age, and, indeed, is sometimes so little developed, that the young baboons have been taken for adult Macaques.

Of all the Quadrumana, the baboons are the most morose in temper, the fiercest in character, and the most repellent in manners.

So odiously disgusting are the habits in which many of these animals continually indulge, that, as a general rule, their presence is offensive in the extreme, and excepting for purposes of scientific investigation, it is better to shun the cage that holds any specimen of these creatures.

There are now and then exceptional cases, but they are few and far between, and it is hardly possible to watch an adult baboon for many minutes without incurring a risk of some shock to the nerves. Even their exceeding cunning, and the crafty wiles which are hatched in their fertile brains, cannot atone for their habitual offences against decorum.

BABOONS.

It is rather curious that in the preceding genera, such as the Cercopitheci, and the Cercocebi, the chief characteristic from which the genus derives its rather lengthy title is founded upon the tail; while in the baboons, the systematic naturalists leaped at one bound to the opposite extremity of the body, and took up their stand upon the head.

For the introduction to science of the GELADA, one of the most singular of these animals, we are indebted to Dr. Ruppell, who has gained so well-earned a name in the annals of natural science.

Together with all the Cynocéphali, the Gelada is a native of Africa, Abyssinia being the country from which our specimens have been derived. Dr. Ruppell, in his work on the "Fauna of Abyssinia," places this animal among the Macaques. The adult animal exhibits in perfection the curious mass of hair that is seen to cover the neck and shoulders of the monkeys of this group, and sits magnificently placid under the shade of its capillary mantle.

The young Gelada is almost totally devoid of this heavy mane, if it can be so called, and only by slight indications gives promise of the future development.

The general color of this animal is a brown tint of varying intensity. The body and mane are of a dark brown, fading into a m[illegible] lighter hue on the top of the head and sides of the

face. The limbs partake of the character of the body, with the exception of the fore-legs, and paws, and the hinder feet, on which the fur is nearly black.

The baboons are more quadrupedal in their gait than any of the animals hitherto described, their formation being well adapted to such a style of progression. Even in walking some three or four steps, they seldom move otherwise than on all-fours, and when at liberty in their native haunts, are almost invariably seen either to walk like a dog, or to sit in the usual

GELADA.—*Cynocephalus gelada.*

monkey fashion, discarding all attempts to imitate the human attitude. Sometimes they will stand in a tolerably erect posture for a few moments if they are desirous of looking at a distant object, or of playing some of their fantastic pranks; but even in that case, they usually aid themselves by resting a paw on any convenient support.

Their paces are generally of two kinds, a walk when they are at leisure and uninterrupted in their proceedings, and a gallop when they are alarmed, or otherwise hurried. The walk is remarkable for its jaunty impertinence, and must be seen before it can be properly appreciated. There is an easy, undulating swagger of the whole person, and a pretentious carriage of the tail, that, aided by the quick cunning blink of the little deep-set eyes, imparts an indescribable air of effrontery to the animal. This characteristic action is admirably hit off by the artist in the figures depicted in the engraving on page 56. Their pace, when hurried, is a gallop, somewhat resembling that of a dog.

All the baboons are excellent climbers of trees, as well as accomplished cragsmen, and are seldom found very far from trees or rocks. As they band together in great numbers, they are nearly invincible in their own domains, whether of forest or cliff, bidding defiance to almost every enemy but man.

Although more ready to shun an enemy than to attack, and always preserving the better part of valor, they are terrible foes when they are brought to bay, and turn upon their enemies with the furious energy of despair. Active to a degree, and furnished with powerful limbs, they would be no despicable antagonists were their means of attack limited to hands and feet alone; but when their long sharp teeth and massive jaws are thrown into the scale, it will be seen that hardly the leopard itself is a more formidable animal.

CHACMA.—*Cynocephalus porcarius.*

The teeth are formed in a manner which peculiarly fits them for the mode of attack that is employed by all the baboons. The great canine teeth are long and pointed at their tips, while their inner edge is sharp as that of a knife, and can cut with more effect than many a steel weapon.

Knowing well the power of the terrible armature with which he is gifted, the enraged baboon leaps upon his foe, and drawing it towards him with his hands and feet, fixes his teeth in its throat until the sharp fangs meet together. He then violently pushes the miserable aggressor from him, so that the keen-edged teeth cut their way through the flesh, and inflict a wound that is often immediately fatal.

In this manner they repel the attacks of dogs; and woe be to the inexperienced hound who is foolish enough to venture its person within grasp of the baboon's feet or hands. Many a time have these reckless animals paid for their audacity by their life. The whole affair is the work of only a few seconds. The baboon is scampering away in hot haste, and the hound following at full speed. Suddenly the fugitive casts a quick glance behind him, and seeing that he has only one antagonist close upon him, wheels round, springs on the dog before it can check itself, and in an instant flings the dying hound on the earth, the blood pouring in torrents from its mangled throat.

Of the Dog-headed baboons, the species which is most celebrated for such feats of prowess is the well-known animal called the Chacma, or Ursine Baboon, the latter title being given

to it on account of the slighty bear-like aspect of the head and neck. The word Chacma is a corrupted, or rather a contracted form of the Hottentot name T'chakamma. The Zulu name for this baboon is Imfena, a much more euphonious word, without that odious click, so impossible of achievement by ordinary vocal organs. In the same dialect, one which is in almost every case remarkable for the rich softness of its intonation, the word "Inkau," is the synonym for a monkey.

This animal, when it has attained its full age, equals in size a large mastiff, or an ordinary sized wolf; while, in bodily strength and prowess, it is a match for any two dogs that can be brought to attack it.

Curiously enough, although it is so ruthless an antagonist, being the certain slayer of any hound that may come to close quarters, there is no animal which is so eagerly hunted by the South African hounds. Experience seems in this case to have lost its proverbially instructive powers; and the cruel death of many comrades by the trenchant fangs of the Chacma, has no effect in deterring the ardent hound from attacking the first baboon that comes in its way.

The owners of the hounds are more careful in this matter than are the dogs themselves, and evince more caution in setting their dogs on the track of a baboon than on the "spoor" of a leopard, or even of the regal lion himself.

The Chacma is a most accomplished robber, executing his burglaries openly whenever he knows that he will meet with no formidable opposition, and having recourse to silent craft when there are dogs to watch for trespassers, and men with guns to shoot them.

With such consummate art do these animals plan, and with such admirable skill do they carry out their raids, that even the watchful band of dogs is comparatively useless; and the cunning robbers actually slip past the vigilant sentries without the stirring of a grass blade, or the rustling of a dried twig, to give notice to the open ears of the wakeful but beguiled sentries.

In such a case, the mode to which they resort is clever in the extreme.

They know full well, that if a number of their body were to enter the forbidden domain, they could hardly elude the observation or escape the hearing of dogs and men; so they commit the delicate task of entering the enemy's domains to one or two old experienced baboons. These take the lead, and gliding softly past the sentry dogs, find admission by some crevice, or by the simpler mode of climbing over the fence.

Meanwhile, the rest of the band array themselves in a long line, leading from the scene of operations to some spot where they will be out of danger from pursuit.

All being ready, the venturous leaders begin to pluck the fruit, or to bite off the stalks, as the case may be, and quietly hand the booty to the comrade who is nearest to them. He passes the fruit to a third, who again hands it to a fourth; and thus the spoil is silently conveyed to a distance, in a manner similar to that which is employed in handing water-buckets to a fire-engine. When a sufficient amount of plunder has been secured, the invading party quietly make their retreat, and revel in security on their ill-gotten goods.

Although on service for the general weal, each individual baboon is not unmindful of his personal interest; and while he hands the booty to his next neighbor, deftly slips a portion into his pouches, much on the same principle that an accomplished epicure, while busily carving for the assembled guests, never loses sight of his own particular predilection, and when he has exhausted the contents of the dish, quietly assumes the portion which he had laid aside.

When young, the Chacma is docile enough, and by its curious tricks affords much amusement to its master and those around it. Not only for amusement, however, is this animal detained in captivity, but its delicate natural instincts are sometimes enlisted in the service of its master. It displays great ability in discovering the various roots and tubers on which it feeds, and which can also be used as food for man; and in digging like Caliban, with his long nails, pignuts.

A more important service is often rendered by this animal than even the procuration of food; and that is, the hunting for, and almost unfailing discovery of water.

In the desert life, water loses its character of a luxury, and becomes a dread necessity; its partial deficiency giving birth to fearful sufferings, while its total deprivation, even for

a day or two, causes inevitable death. The fiery sun of the tropical regions, and the arid, scorching atmosphere, absorb every particle of moisture from the body, and cause a constant desire to supply the unwonted waste with fresh material, exactly where such a supply is least attainable.

Among these climates, the want of a proper supply of water is soon felt, the longing for the cool element becomes a raging madness; the scorched and hardened lips refuse their office, and the tongue rattles uselessly in the mouth, as if both tongue and palate were cut out of dried wood.

The value of any means by which such sufferings can be alleviated is incalculable; and the animal of which we are speaking is possessed of this priceless faculty.

When the water begins to run short, and the known fountains have failed, as is too often the sad hap of these desert wells, fortunate is the man who owns a tame Chacma, or "Bavian," as it is called. The animal is first deprived of water for a whole day, until it is furious with thirst, which is increased by giving it salt provisions, or putting salt into its mouth. This apparent cruelty is, however, an act of true mercy, as on the Chacma may depend the existence of itself and the whole party.

BLACK MACAQUE. (See also cut on page 51.)

A long rope is now tied to the baboon's collar, and it is suffered to run about wherever it chooses, the rope being merely used as a means to prevent the animal from getting out of sight. The baboon now assumes the leadership of the band, and becomes the most important personage of the party.

First it runs forward a little, then stops; gets on its hind feet, and sniffs up the air, especially taking notice of the wind and its direction. It will then, perhaps, change the direction of its course; and after running for some distance take another observation. Presently it will spy out a blade of grass, or similar object, pluck it up, turn it on all sides, smell it, and then go forward again. And thus the animal proceeds until it leads the party to water; guided by some mysterious instinct which appears to be totally independent of reasoning, and which loses its powers in proportion as reason gains dominion.

The curious employment of the animal for the discovery of water, is mentioned by Captain Drayson, R.A., in his interesting work, "Sporting Scenes among the Kaffirs of South Africa." In the course of the same work he gives many life-like illustrations of baboon habits, whether wild or tame.

Of the daily life of the baboons, the following affords a graphic and amusing description.

"During the shooting trip with the Boers, I awoke before daybreak, and as I felt very cold and not inclined to sleep, I got up, and taking my gun, walked to a little ravine, out of which a clear, murmuring stream flashed in the moonlight, and ran close past our outspan. A little distance up this kloof, the fog was dense and thick; the blue and pink streaks of the morning light were beginning to illuminate the peaks of the Draakensberg, but all immediately around us still acknowledged the supremacy of the pale moonlight. I wanted to see the sun rise in this lonely region, and watch the changing effects which its arrival would produce on the mountains and plains around.

"Suddenly I heard a hoarse cough, and on turning, saw indistinctly in the fog a queer little old man standing near, and looking at me. I instinctively cocked my gun, as the idea of bushmen and poisoned arrows flashed across my mind. The old man instantly dropped on his hands; giving another hoarse cough, that evidently told a tale of consumptive lungs; he snatched up something beside him, which seemed to leap on his shoulders, and then he scampered off up the ravine on all-fours. Before half this performance was completed, I had discovered my mistake; the little old man turned into an ursine baboon with an infant ditto, who had come down the kloof to drink. The 'old man's' cough was answered by a dozen others, at present hidden in the fogs; soon, however,

> "'Up rose the sun, the mists were curl'd
> Back from the solitary world
> Which lay around,'"

and I obtained a view of the range of mountains gilded by the morning sun.

"A large party of the old gentleman's family were sitting up the ravine, and were evidently holding a debate as to the cause of my intrusion. I watched them through my glass, and was much amused at their grotesque and almost human movements. Some of the old ladies had their olive branches in their laps, and appeared to be 'doing their hair,' while a patriarchal old fellow paced backwards and forwards with a fussy sort of look; he was evidently on sentry, and seemed to think himself of no small importance.

"This estimate of his dignity did not appear to be universally acknowledged; as two or three young baboons sat close behind him watching his proceedings; sometimes with the most grotesque movements and expressions they would stand directly in his path, and hobble away only at the last moment. One daring youngster followed close on the heels of the patriarch during the whole length of his beat, and gave a sharp tug at his tail as he was about to turn. The old fellow seemed to treat it with the greatest indifference, scarcely turning round at the insult. Master Impudence was about repeating the performance, when the pater, showing that he was not such a fool as he looked, suddenly sprang round, and catching the young one before he could escape, gave him two or three such cuffs, that I could hear the screams that resulted therefrom. The venerable gentleman then chucked the delinquent over his shoulder, and continued his promenade with the greatest coolness: this old baboon was evidently acquainted with the practical details of Solomon's proverb.

"A crowd gathered round the naughty child, who, child-like, seeing commiseration, shrieked all the louder. I even fancied I could see the angry glances of the mamma, as she took her dear little pet in her arms and removed it from a repetition of such brutal treatment."

One of these animals, personally known to Captain Drayson, was a great practical jester, and was fond of terrifying the Kaffir women by rushing at them open mouthed, catching them by their ankles, and mowing at them with extravagant grimaces, as if he meant to eat them up bodily. Sometimes a dog would be set at him while thus employed, and change the aspect of affairs in a moment. The pursuer then became the pursued, and quitting his prey, made for the nearest tree, up which he scuttled, and settled himself among the branches just so high as to be out of reach of the dog's jaws, and just so low as to give hopes of success by a higher than ordinary leap. There he would sit as if there were no such being in the world as a dog, and giving himself up to the contemplation of the surrounding scenery, or the aspect of the sky, would leisurely pursue his train of thought until the dog was tired and went away.

His keenness of sight was remarkable, his eyes possessing powers of distant vision that rivalled the telescope.

In order to prove the powers of the creature's sight, his master made several experiments, by going to so great a distance that the baboon perched on its pole was barely perceptible to the naked eye, and from thence producing sundry distortions of countenance, and strange attitudes of body. By looking through a telescope, he was able to see that the animal was not only capable of discerning and imitating his gestures, but even the very changes of counte-

nance; so that a grimace on the part of the gallant owner was immediately reproduced, or rather, represented by a grin on the part of the baboon.

There is a well-known story of a monkey who literally "plucked a crow" which had been in the habit of stealing his food, and curiously enough, the scene was re-enacted by this very animal, with the exception of one or two slight differences.

He was chained to the pole because he was rather too mischievous to be left entirely at liberty. He had been already detected in eating a box of wafers, studying practically the interior construction of a watch, and drinking a bottle of ink—in this last exploit displaying similar tastes with the siamang described in this volume. His age was only two years at the time when the account of his performances was written.

Captain Drayson has very kindly furnished me with the following original anecdotes of this tame Chacma:

"A young baboon which had been reared by his owner from infancy resided for some months near my tent, and often served to while away an idle hour.

"Sometimes a stout earthen pot, which had just been emptied of its contents of good English jam, was submitted to the mercy of 'Jacob,' as this animal was named. The neck of the pot would not admit even a hand to be inserted, and it was most amusing to watch the manœuvres which were practised to procure some of the remnants of the sweets. If a stick were near, the jam was scooped out; but if not, the pot was elevated high above Jacob's head, and then flung to the ground with great force.

"The earthen pot was stout and strong; but upon one occasion, by good luck, the pot struck a stone, and was fractured. Great was the delight of Jacob, but not unmixed with suspicion; for he appeared to think that the bystanders had been merely waiting to take advantage of his skill in projectiles, and that they would now purloin his fragments. Cramming his pouches full of bits of the jam-pot, he then seized the largest remaining piece and retreated to the top of his pole to enjoy the licking.

"He was always fully occupied for some hours after these feats; for the jam adhered to his body, and he had to contort himself to lick off all the particles.

"There is almost as much expression in the tail of a baboon, as there is in his face. The alteration of the curve in which it is usually carried, or the lowering of this appendage, having a special meaning, according to the character of the individual.

"The baboon is perfectly aware of the dangerous character of the snake, and when he approaches a clump of bushes for the purpose of feasting upon the young shoots or ripe berries, he invariably peeps suspiciously amongst the underwood in search of his dreaded foe.

"In consequence of Jacob's detestation of the serpent race, a cruel trick was frequently played upon him, but which was one that gave great amusement. This was to frighten him with a dead snake.

"Serpents of every description were here very common; and sometimes when one had been killed, it was laid across a stick and taken towards Jacob. The instant his persecutor came in sight, the snake was sure to be seen; Jacob would then wrap himself up in his blanket and turn over an old box, under which he would hide. This retreat soon failed him, as there was a small knot-hole in the box, through which the tail of the snake was insinuated.

"Finding that this artifice had failed, he would upset the box, and spring away; a little dodging would then take place, and Jacob would be hemmed in so that the snake was brought close to him. Then, indeed, things required a desperate remedy, and with great presence of mind, he would seize the *tail*—invariably the tail—of the snake, and would fling the reptile to a distance. He would then at once rush towards his persecutor, and sit down beside him, as though to intimate that he wished to be friends.

"There was only one method from which there was no escape; this was to tie the snake loosely around the upper part of Jacob's chain, and then hold it so that a little shaking caused the reptile to slide towards him.

"After several jumps and grimaces, he would appear to be convinced that escape was useless, and would then resign himself complacently to his fate.

"Lying down on his side as though perfectly prepared for the worst, he would remain as though dead. But as soon as the snake was taken away, the mercurial temperament of the creature instantly showed itself; for he would then jump on the shoulders of any person who might happen to be near, and would play off some practical joke as a retaliation.

"Although evidently alarmed whenever snakes were brought near him, he still appeared perfectly to understand that nothing more than a joke was intended.

"His treatment of small dogs was very quaint.

"If by chance a young pup came near him, he would seize hold of it and cuddle it in his arms in a most affectionate and maternal way; not being very particular, however, whether he held the animal by the ear, the tail, or a leg.

"If the pup, as sometimes happened, objected to this treatment, and endeavored to escape or to misbehave, Jacob would catch hold of its hind leg or tail, and would swing it round at arm's length, and at last fling it from him.

"The morning of life is decidedly the period of light-heartedness with the baboon; when the weight of years has been accumulated upon the shoulders of a veteran he becomes staid and philosophic, and sometimes rather quarrelsome, objecting strongly to the presuming manners of his juniors, and taking every opportunity to punish them should they be caught taking liberties with him."

The Chacma is supposed to be rather a long-lived animal, and with some reason. For although it is not easy to follow the course of a Chacma's existence from birth to death, and there are not as yet any official registers among the quadrumanous tribe, there are certain registers which are written by Nature's hand, and not subject to erasion, forgery, or alteration. One of these official registers, is the proportion that exists between the time which is passed by an animal before it attains its adult state, and the entire term of its life. It is found that the Chacma arrives at its full development at the age of eight or nine years; and, therefore, its lease of life may be calculated at about forty years.

The chief, and most legitimate food of this baboon, is the plant which is called from this circumstance, Babiana. It affords a curious example of vegetable life existing under trying circumstances, as it only gets rain for three months in the year; and during the remainder of the twelvemonth is buried in a soil so parched, that hardly any plant except itself can exist. The portion that is eaten is the thick, round, subterraneous stem, which is neatly peeled by the more fastidious baboons, and eaten entire by the less refined and more hungry animals.

The number of species belonging to the Dog-headed Baboons is very limited. All of them seem to be possessed of very similar habits and modes of action. The species which is represented in the accompanying engraving presents characteristics that are typical of the entire race, and is therefore called the Baboon, *par excellence.* There is some difficulty about the precise distinctions between several of the species,—a circumstance which, although to be regretted, is almost inevitable from the great external changes which are occasioned by age and sex, and the impossibility of keeping a close watch on these animals in their wild state.

The most interesting portion of natural history is that which relates the habits and manners of the creatures observed; and in the majority of instances the narrations are given by persons who, although fully alive to the little traits of temper, humor, or ingenuity, are unacquainted with the more recondite details of systematic zoology.

Consequently, an act performed by a baboon is considered by them in virtue of the deed itself, rather than in relation to the particular species of the animal who achieved it; and the intellectual power displayed by the animal is thought to be of more real value than the number of projections upon its molar teeth. This uncertainty is very great among the baboons, and as long as an act of theft or cunning is performed by a baboon, the narrator seems to care little whether the species be the Chacma, the Baboon, the Papion, or any other member of the same genus.

There are many most curious and interesting anecdotes on record which admirably illustrate the baboon nature, and yet which are not to be attributed with absolute certainty to any one species.

For example, there is a well-authenticated tale of a tame baboon which used to perform all kinds of clever tricks, some for the pecuniary benefit of its master, and others for its own individual pleasure.

The animal must have been of great service to its owner, for it cost him nothing in food, being accustomed to steal its own daily supply. On one occasion this capability was put to the test; a date-seller being the unfortunate subject upon whom the talents of the baboon were tried. The performance began by a simulated fit on the part of the animal, which fell down apparently in great pain, and grovelled on the earth in a paroxysm of contortions, its eyes steadily fixed on those of the date-seller.

Apparently motiveless as this conduct might be, it was the result of much care, for every writhing twist of the body brought the creature nearer to the basket which contained the coveted dainties. When it had arrived within reach, it fixed the date-seller's attention by strange grimaces, and, with its *hind feet*, commenced emptying the basket.

The most absurd part of the story is, that its "wicked conscience smited it" for the theft, and that it perfectly understood the unjustifiable character of the deed which it had just accomplished; for, as it was retreating, after having secured its plunder, a mischievous boy gave the animal a sly tug of the tail. The baboon, fancying that the insult had come from the date-seller, in reprisal for the abstraction of his goods, turned round, flew at the man, and, if it had not been captured by its master, would probably have done him some material injury.

A very quaint story is told of the same animal, which, if true, exhibits the strangest combination of cunning, simplicity, and ready wit, that ever entered the brain of living creature. At all events, if it be not true, it deserves to be so.

It appears that the baboon was so tame, and had proved so apt a pupil, that its master had taught it to watch the pot in which he prepared his dinner, and was accustomed to leave it in charge of the culinary department while he was engaged in other business. One day, he had prepared a fowl for his dinner, and, after putting it into the pot, and the pot on the fire, went away for a time, leaving the baboon in charge, as usual.

For a time all went well, and the animal kept a quiet watch over the fire. After a while, it was seized with a desire to see what might be in the pot, and so, taking off the lid, peeped in. The odor that issued from the boiled fowl was gratifying to the animal's nostrils, and induced it, after a brief mental struggle, to pick just a little bit from the fowl, and to put the bird back again. This was done accordingly, but the experiment was so very successful that it was speedily repeated. Again and again was a morsel pinched from the fowl, until the natural consummation followed—the fowl was picked quite clean, and nothing left but the bones.

Now came remorse and sudden fear, causing the wretched animal to chatter with terror at the thought of the scarifying which was sure to follow so grievous an offence.

What was the poor thing to do? Time was passing, and the master must soon return for his dinner. At last a brilliant thought flashed through the animal's brain, and it immediately acted upon the idea.

Now, in order to understand the depth of the craft which was employed, it must be remembered that the baboons are furnished, in common with very many monkeys, with two callosities on the hinder quarters, which serve them for seats, and which are, in these animals, of a bright red color.

Rolling itself over and over in the dust, it covered its body with an uniformly sombre coating, and then, gathering itself well together, and putting its head and knees on the ground, it presented an appearance marvellously resembling a rough block of stone with two pieces of raw meat laid on its top. In those climates the birds of prey absolutely swarm, and, being encouraged by their well-earned impunity, crowd round every place where cooking is going on, and where they may have a chance of securing a portion, either by lawful gift, or lawless rapine. Several of these birds, among which were some kites, being attracted by the scent of the boiling meat, came to the spot, and seeing, as they thought, some nice raw meat temptingly laid out for them, swept upon their fancied prize.

In a moment the baboon had sprung to its feet, and, with a rapid clutch, seized one of

the kites. The cover was again taken off the pot, and the shrieking and struggling prisoner thrust in to the boiling water in spite of its beak and claws. The lid was then replaced, and the baboon resumed its post of sentry with the placid ease that belongs to a conscience void of offence.

The baboons, when in their native fastnesses, are under a very complete system of discipline, and enforce its code upon each other most strictly. Considering the daring inroads which these creatures constantly make upon their neighbors' property, and the daily dangers

BABOONS.—*Cynocephalus babuin.*

to which all gregarious animals are necessarily subject, the most wary vigilance and the most implicit obedience are necessary for the safety of the whole community.

The acknowledged chiefs of the association are easily recognized by the heavy mass of hair that falls over their shoulders, and which, when thick and gray with age, is a natural uniform that cannot be wrongly assumed or mistaken.

These leaders have a mode of communicating their orders to their subordinates, and they again to those placed under them, in a curiously-varied language of intonations. Short and sharp barks, prolonged howls, sudden screams, quick jabberings, and even gestures of limbs and person, are all used with singular rapidity, and repeated from one to the other. There was a system of military telegraphing, by means of attitudes and sounds, which was invented some time ago, and which really might have been copied from the baboons, so much do their natural tactics resemble the artificial inventions of mankind.

It must be remembered that, clever as are these animals, their ingenuity is quite equalled, and even surpassed, by many of the animal kingdom which are placed much lower in its system. Therefore, although these examples of their sagacity are thus placed on record, it is

not to be imagined that the quadrumanous animals are put forward as the most rational of the lower creations.

In recording the known instances of the mental powers displayed by the monkey tribe, we only give to the creature its due meed of praise, and act honestly by treating of every being with equal justice. It is so sad that many writers should set about such a task, having a purpose to serve, and that, in order to give to their own theory the greatest weight, they lay the greatest stress upon those records which tell in their favor, while they suppress those facts which might tend to overthrow or modify their own peculiar views.

To resume the account of the baboons:

Like all animals which assemble in flocks, they never rest or move without the protection of certain sentries, which are chosen out of their number, and which keep the most careful watch over the troop to which they belong. The duty is anything but an agreeable one, and its labors are equally divided among the community, each competent member taking that task upon himself in his own turn.

When they make an attack upon a field or a plantation, they always guard against surprise by posting sentries on elevated spots, and, knowing that due notice will be given if any suspicious object be seen or heard, they devote all their energies to the congenial business of theft, while the sentries remain at their posts, never daring to withdraw their attention from the important charge which is committed to them. However, the sentinels do not entirely lose the benefit of all the good things, but take their proper share of the spoil after the thievish band has returned to a place of safety; so that their greatest trial is an exercise of patience of rather a prolonged character.

In their rocky fastnesses, their chief foe is the leopard, and so terrified are they at the very sound of their enemy's voice, that even a very poor imitation of a growl is sufficient to set them flying off as fast as their legs can carry them, while a breath of air that bears upon its wings the least taint of that rank odor which exhales so powerfully from the large Felidæ, scatters dire consternation among the assemblage. There is a story of a life saved by means of the ingenuity of a native servant, who, seeing his master beset by a party of angry baboons, quietly stepped behind a rock, and imitated the growl of a leopard with that startling fidelity that is so general an accomplishment among savage tribes.

The leopard seldom attacks an adult baboon, not caring to risk its claws and fangs against the hands and teeth of so powerful an opponent. Much less does it openly venture to assault a band of baboons in hopes of securing one of their number. Its mode of procedure is by slily creeping round their rocky domains, and whipping off one of the young baboons before an alarm is given.

Bold as are these animals, they will not dare to follow a leopard into its den; so that, if their dreaded foe succeeds in once getting clear of their outposts, it may carry off its prey with impunity. The constant dread which the leopard seems to excite in a baboon's mind appears to be occasioned more by the stealthy craft and persevering aggression of the animal, rather than by its physical powers alone.

One of these animals, the Thoth Baboon, bore a conspicuous part in the sculptured mythology of the Egyptians, and may be seen in almost every stony document that is impressed with the hieroglyphical wisdom of that wondrous nation. Only the male seems to have been considered worthy of forming one of the symbols of that representative language, as is shown by the fact that, whenever the Thoth Baboon is engraved, the large mass of hair over the shoulders proves it to be of the male sex, and adult. The attitude is generally a sitting position.

Among the Egyptians, the god Thoth held the same place among the minor deities as Hermes of the Greeks, and Mercury of the Romans,—being probably the prototype of them both.

Another well-known species of the Dog-headed Baboons is the PAPION, an animal of rather a more refined aspect than the Chacma, or, more properly speaking, not quite so brutal.

The face, although unattractive enough, is yet not so repulsive as that of the Chacma, and the colors are rather more bright than those of that animal.

Great reverence was paid to these creatures, and specially to certain selected individuals

which were furnished with a safe home in or near their temples, liberally fed while living, and honorably embalmed when dead. Many mummied forms of these baboons have been found in the temple caves of Egypt, swathed, and spiced, and adorned, just as if they had been human beings.

Some authors say that the Thoth Baboon was an object of worship among the Egyptians, but hardly with sufficient reason. Various animal forms were used as visible living emblems of the attributes of deity, and the qualities of the human intellect, but were no more objects of idolatrous worship than the lion of England, or the eagle of America.

The fur of the Papion is of a chestnut color; in some parts fading into a sober fawn, and in others warmed with a wash of ruddy bay. The paws are darker than the rest of the body. When young, it is of a lighter hue, and deepens in color until it reaches its full age. In the prime of existence its colors are the lightest, but as years begin to lay their burden on the animal, the hairs begin to be flecked with a slight grizzle, and, in process of time, the snows of age descend liberally, and whiten the whole fur with hoary hairs.

The sense of smell is very largely developed in the baboons, their wide and roomy snouts giving plenty of space for the olfactory nerve to spread its branches. Aided by this formation, they are enabled to distinguish between poisonous and wholesome food—much to the advantage of their human neighbors, who profit by their intelligence, knowing that they may safely eat any vegetable which a baboon will admit into its list of viands. What is good for baboon is good for man, say they.

As to the animal food in which these animals indulge, it might possibly be made use of under the pressure of imminent starvation, but hardly under any circumstances less distressing. It must require a very hungry man to eat a scorpion or a centipede, although ants and some other insects are said to possess quite a delicate and almond-like flavor.

As has already been mentioned, they are singular adepts at discovering the presence of water, even though the priceless element should lie concealed under sand or stony ground. In such a case of subterraneous springs, the baboons set regularly to work, and, using their hands in lieu of spades and mattocks, dig with wonderful celerity. While thus working, they divide the task among themselves, and relieve each other at regular intervals.

When the baboons move in parties, they employ an almost military mode of arranging their numbers. In the advanced guard are the young males, who keep forward, well in front of the main body, and run from side to side, for the purpose of reconnoitering the ground over which they will have to pass. The females and their young occupy the centre, while the rear is brought up by the old and experienced males.

Thus, the more active and vigilant animals lead the way, the weakest are kept under protection, and the powerful elders have the whole of their charge constantly in view. In order to insure the utmost precision in the line of march, several trusty animals are selected as "whippers in," whose business it is to keep order, to drive stragglers back to their proper position, to moderate the exuberant playfulness of the advanced guard, to keep a watchful eye upon the weaker members of the community, and to maintain a correspondence with the venerable chiefs in the rear.

The number of individuals composing a troup is sometimes above one hundred, ten or twelve being adult males, twenty or so, adult females, and the rest of the band composed of the young of both sexes.

The specimens of baboons that have been captured and domesticated, are generally taken by a crafty stratagem. Jars of well-sweetened beer are placed near their haunts, and drugged with some of those somniferous herbs which are so well known to the Orientals.

The baboons, seeing the jars left apparently unwatched, come cautiously from their homes, and assemble round the novel articles with much grin and chatter. They first dip in a cautious finger, and taste suspiciously. Misgiving gives place to confidence, and they partake freely of the sweet treachery. The soporific liquid soon manifests its power, and the baboons fall easy victims to their captors.

The two animals with which this history of baboons is closed, are removed from the preceding species, on account of various points in their conformation, and are placed in a separate genus, under the name of Papio.

FEW ANIMALS present a more grotesque mixture of fantastic embellishment and repulsive ferocity than the baboon which is known under the name of MANDRILL.

The colors of the rainbow are emblazoned on the creature's form, but always in the very spots where one would least expect to see them. A bright azure glows, not in its "eyes of heavenly blue," but on each side of its nose, where the snout is widely expanded, and swollen into two enormous masses. The surfaces of these curious and very unprepossessing projections are deeply grooved, and the ridges are bedizened with the cerulean tint above mentioned. Lines of brilliant scarlet and deep purple alternate with the blue, and the extremity of the muzzle blazes with a fiery red like Bardolph's nose.

THE MANDRILL.—*Papio maimon.*

That all things should be equally balanced, the opposite end of the body is also radiant with chromatic effect, being plenteously charged with a ruddy violet, that is permitted to give its full effect, by the pert, upright carriage of the tail.

The general color of the fur is of an olive brown tint, fading into gray on the under side of the limbs, and the chin is decorated with a small yellow pointed beard. The muzzle is remarkable for a kind of rim or border, which is not unlike the corresponding part in a hog, and is well shown in the engraving. The ears are small, devoid of fur, and of a black color with a tinge of blue.

As in the Diana, the colors of this animal are more of a character that we look for in the plumage of birds, than in one of the mammals. These bright tints do not, however, belong to the hair, but only are developed in the skin, fading away after death, and turning into a dingy black. The same circumstance is found to take place in many other animals, the skin colors being very fugitive.

So dependent are these tints upon the life of the animal, that unless it be in perfect health and strength, the bright colors dim their beauty, and form, by their brilliancy or faintness, a tolerable test of the state of the creature's health.

The curious cheek expansions are due, not to the muscles of the face, but to the very bones themselves, which are heavy, protuberant, and ridged in the bone skull as in the living head.

This addition to the usual form of the skull, adds greatly to the brutish appearance of the animal, and gives it a less intelligent aspect than that which is seen in most of the monkey tribe.

Only the male Mandrill possesses these strange adornments in their full beauty of size and color, the females being only gifted with the blue tint upon the muzzle, and even that is of a much less brilliant hue than in the male. The cheek-bones are but little elevated above the face, and are without the deep furrows that give so strange an appearance to the male sex.

Even in the male animal, these ornaments do not fully develop themselves until the creature has attained maturity. Not until the task of dentition is fully accomplished does the Mandrill shine out in all the glory of his huge azure nose, his crimson mouth, and carmine termination.

Of all the baboons, the Mandrill appears to be the most hopelessly savage, though examples are not wanting of individuals which have been subjected to kind treatment, and have proved tractable and gentle—that is, for baboons.

The adult Mandrill is liable to terrible gusts of passion, during which it seems to be bereft of reason and possessed with an insane fury. That which in other monkeys is a hasty petulance, easily excited and soon passing away, becomes in this animal a paroxysm of wild and blind rage, to which the anger of an ordinary monkey is but a zephyr to a tornado.

When thus infuriated—and but small cause is needed for its excitation—the animal seems to be beside itself with fury, heedless of everything but the object of its anger. A demon light glares from the eyes, and it seems verily possessed with a demon's strength and malignity. With such violence do its stormy passions rage, that the vital powers themselves have been known to yield before the tempest that agitates the mind, and the animal has fallen lifeless in the midst of its wild yells and struggles.

"Sudden and quick in passion" as is the Mandrill, it bears no short-lived anger, after the custom of most quick-tempered beings, but cherishes a rancorous and deeply-rooted vengeance against any one who may be unfortunate enough to irritate its froward temper. It will often call in the aid of its natural cunning, and will pretend to have forgotten the offence, in order to decoy the offender within reach of its grasp.

The power of this animal is very great, and more than might be inferred from its size alone, though its dimensions are far from trifling.

Unless they travel in large numbers and well armed, the natives shrink from passing through the woods in which these animals make their residence.

For the Mandrills live in society, and their bands are so powerful in point of numbers, and so crafty in point of management, that they are about as formidable neighbors as could be imagined. It is said that wherever they take up their abode they assume supreme sway, attacking and driving from their haunts even the lordly elephant himself.

These animals are also affirmed to keep a watch over the villages, and, when their male population is dispersed to field labor, that they issue in large companies from the woods, enter the defenceless villages, and plunder the houses of everything eatable, in spite of the terrified women. Some of the female population are said to fall victims to the Mandrills, which carry them away to the woods, as has been related of the Chimpanzee.

This latter assertion may be untrue, but it is strengthened by much collateral evidence. The large male baboons, when in captivity, always make a great distinction between their visitors of either sex, preferring the ladies to the gentlemen. Sometimes they are so jealous in their disposition that they throw themselves into a transport of rage if any attentions be paid to a lady within their sight.

This curious propensity was once made the means of re-capturing a large baboon—a chacma—that had escaped from its cage in the Jardin des Plantes, in Paris.

It had already baffled many attempts to entice it to its home, and when force was tried, repelled the assailants, severely wounding several of the keepers. At last a ready-witted keeper hit upon a plan which proved eminently successful.

There was a little window at the back of the cage, and when the keeper saw the baboon in front of the open door, he brought a young lady to the window, and pretended to kiss her. The sight of this proceeding was too much for the jealous feeling of the baboon, which flew

into the cage for the purpose of exterminating the offending keeper. Another keeper was stationed in ambush near the cage, and the moment the infuriated animal entered the den, he shut and fastened the door.

The male Mandrills are always more ferocious and less tamable than the females, who are also comparatively free from the revolting habits that are so unfortunately found in the adult males.

There are several instances on record of Mandrills which have led a peaceful life in captivity, and learned many accomplishments—some, perhaps, rather of a dubious nature.

One of the most celebrated of these individuals, surnamed "Happy Jerry," on account of his contented disposition, was a well-known inhabitant of the menagerie at Exeter 'Change during his lifetime; and, even after his death, is still before the public who visit the British Museum.

He was accustomed to drink porter, which he liked, and to smoke a pipe, which he tolerated. He had the honor of being a royal guest, by special invitation, and seems to have passed a life as happy as could well fall to the lot of an expatriated animal.

There are several allusions to this baboon by ancient writers, although they seem to have been very undecided about the real character of the animal.

Topsel gives a really good illustration of the Mandrill, placing it among the hyenas, because preceding writers had done so. However, his own penetrative mind refused to accept this opinion, and after saying that it *might* be the Artocyon, a beast which was supposed to be the offspring of bear and dog, diffidently puts forward his own idea on the subject, which is the correct one, as is usual when men will venture to think boldly for themselves, and shake off the trammels of conventional prejudice.

"His fore-feet," says Topsel, "are divided like a man's fingers. It continually holdeth up his tail, for at every motion it turneth that as other beasts do their head. It hath a short tail, and but for that I should judge it to be a kind of ape." Many of the traits recorded by the same author are precisely applicable to the Mandrill, although, as he thought, that it ought to be a hyena, he has intermixed with his account a few truly hyenine anecdotes.

His name for it is, "The Second Kinde of Hyæna, called Papio, or Dabuh."

In its native land, the usual food of the Mandrill is of a vegetable nature, although, in common with the rest of the baboons, it displays a great liking for ants, centipedes, and similar creatures.

Sometimes it happens that it takes a carnivorous turn, and then will capture and devour small birds, quadrupeds, and reptiles. In captivity it is tolerably carnivorous, its tastes being sufficiently universal to accommodate itself to strong drink, as well as to civilized fare. Meat of all kinds seems acceptable to the animal, as does beer and wine. Tobacco, as we have seen, it can endure, but hardly appreciate.

It drinks by shooting forward its mobile lips into the vessel, and drawing the liquid into its mouth by suction.

When it eats, it generally commences its repast by filling its pouches with food in readiness for another meal, and unless very severely pressed by hunger, never neglects this precaution.

The tail of this animal is a remarkable feature, if it may so be termed, in the general aspect of the baboon. It is short, set high on the back, and curved upwards in a manner that is most singular, not to say ludicrous, in the living animals, and conspicuously noticeable in the skeleton. The skull of an adult Mandrill is most brutal in character. The brain has but little place in the cranium, and the greater part of the surface is either composed of, or covered with, heavy ridges of solid bone that are formed for the support of the large muscles which move the jaws.

The eyes are placed extremely high in the face, leaving hardly any forehead above them, and they are deeply set beneath a pair of morosely overhanging brows. The hair on the head is rather peculiar in its arrangement, forming a kind of pointed crest on the crown, and thus giving an almost triangular outline to the head.

It is a very common animal in its own country, but on account of its great strength, cun-

ning, and ferocity, is not so often captured as might be expected. Even when a specimen is made prisoner, it is generally a very young one, which soon loses in captivity the individuality of its being, and learns to accommodate itself to the altered circumstances among which it is placed.

The name "Maimon," which is applied to the Mandrill, is most appropriate. It is a Greek word, signifying a hobgoblin, and is therefore peculiarly applicable to so uncanny a looking animal.

The DRILL, co-native with the Mandrill, of the coast of Guinea, somewhat resembles the female or young male mandrill, and is not of quite so savage and grotesque an aspect as that animal.

Its cheek-bones are not nearly so protuberant as those of the mandrill's, nor is its skin so brilliantly colored. The upper parts of the body are greener than those of the mandrill, the

THE DRILL.—*Papio leucophaeus.*

yellow rings in the hair being more frequent. Its face and ears are of a light polished black, and the palms of the hands and feet are devoid of hair, and of a coppery tinge.

Formerly the Drill was thought to be only a young mandrill, and was so named. But the fact that even after their second dentition, the male Drills do not put on the furrowed cheek-bones, or the bright coloring that distinguishes the mandrill, is sufficient to prove that it is a distinct species.

Little is known of its habits when in a state of nature, as it has probably been confounded with the mandrill, and its deeds narrated as if they belonged to the last-named animal.

As far as is known, it is much like the mandrill and other baboons in temper, being quiet and docile when young, but subsiding into morose apathy as it becomes older.

The little stumpy tail is very like that of the mandrill, and is covered with short and stiff hair. Its length is not more than two inches even in a full-grown male. The Drill is always a smaller animal than the mandrill, and the female much smaller than the male, from whom she differs also in the comparative shortness of her head, and the generally paler tint of her fur.

AMERICAN MONKEYS.

We have now taken a rapid survey of the varied forms which the Quadrumana of the Old World assume; forms so diversified that there hardly seems to be scope for further modifications. Yet the prolific power of nature is so inexhaustible, that the depth of our researches only brings to view objects of such infinite variety of shape that the mind is lost in wonder and admiration.

Thus it is with the Cebidæ, or American Monkeys. While preserving the chief characteristics of the monkey nature, thus proving their close relationship with the Old World monkeys, they exhibit the strangest modification of details. The four hand-like paws, and other quadrumanous peculiarities, point out their position in the animal kingdom, while sundry differences of form show that the animals are intended to pass their life under conditions which would not suit the monkeys of the Old World.

A view of the New World monkeys as contrasted with those of the Eastern Continent, exhibits strongly marked characteristics that eminently fit them for the arboreal life they are seen to enjoy. Some of the great Apes, notably the Orang, live habitually in trees, but they are not adapted to traverse the tree-tops, and leap from limb to limb as do the monkeys of the Western World.

The peculiar habits of the latter are greatly promoted by the extreme slenderness of their bodies and limbs, and by the singular function of the long tail. The terminal portion of that member is bare and somewhat calloused, and possesses the power to clasp tightly around the limbs of trees; and so great is this power the creature easily swings off its whole weight, thereby leaving the four limbs free for seizing on other points of advantage in its travels through the tree-tops of the forest.

The curiously shaped monkey which is represented in the following engraving, is an excellent example of the Cebidæ, or Sapajous, as they are often called.

The name "Ateles," which is given to the entire genus to which this animal belongs, signifies "imperfect," and has been applied to the creatures because the fore-paws are devoid of useful thumbs. Sometimes that member is almost entirely absent, and in other instances it only just shows itself.

In the Chameck, the thumb is slightly projecting, but even in this case it has only a single joint, and is not furnished with a nail after the usual custom of thumbs and fingers. Even when the thumb reaches its greatest size, it cannot be used as the human thumb, as it is not capable of being opposed to the fingers.

The Chameck is a native of various parts of Brazil, where it is found rather profusely. From all accounts, it seems to be a very gentle creature, and susceptible of a high amount of cultivation. It does not appear to be so capricious of temper as the monkeys of the Old World, and although playful when in the humor for sport, is not so spitefully tricky as its transatlantic relatives. It soon learns to distinguish those persons who treat it with kindness, and will often enter into playful mock combats, pretending to inflict severe injuries, but never doing any real damage.

It is not a very large animal, the length of its body being about twenty inches, and the tail just over two feet in length. The fur is tolerably long, and falls densely over the body and limbs.

On referring to the engraving, it will be seen that the hair is longer than usual by the region of the hips, and rather thickly overhangs the hinder quarters. This arrangement seems to stand the creature in place of the callosities which have so often been alluded to, and which are not possessed by the Cebidæ. These monkeys are also destitute of cheek-pouches, but, as if to compensate them for the want of these appendages, they are furnished with an additional supply of teeth, having thirty-six instead of thirty-two, which is the ordinary complement.

The nostrils are very different from those of the monkeys which have already been described, as they open at the sides instead of underneath, and are separated from each other by a wide piece of cartilage. The ear is less unlike that of man than is the case with the

greater part of the monkey tribe, the greatest distinction between the two being that the ear of the monkey is destitute of that soft lower lobe, which is so characteristic of the human ear, and through which ladies barbarously hook their auricular trinkets.

If the reader will refer to the illustration of the Chameck, he will see that the tail is the most conspicuous member of the animal. For the greater part of its length it is thickly covered with long drooping fur, but the last seven or eight inches are nearly denuded of hair on the upper surface, and entirely so on the lower. Towards the base it is extremely thick, and is furnished with muscles of great strength and marvellous flexibility, destined to aid the member in the performance of those curiously active movements for which these monkeys are so renowned.

CHAMECK.—*Ateles chameck.*

The tail of these animals is to them equivalent, and more than equivalent, to a fifth hand. The naked extremity is endowed with so sensitive a surface that it can be applied to most of the uses to which the hand can be put, while the powerful muscles that move it are so strong and lithe that they can exert a singular amount of strength, even so as to suspend the entire weight of the animal.

In ascending trees or traversing the branches, the monkeys continually aid their progress by twining the end of the tail round the neighboring boughs. Sometimes they even suspend themselves wholly by their tails, and after giving their bodies a few oscillating movements, boldly swing themselves from one branch to another, clearing considerable spaces in the effort. On account of these capabilities, the tail is known by the name of "prehensile."

The color of the Chameck is nearly black, and of a uniform tint over the head, body, and limbs. Its hair is rather long and thick, in some parts taking a slight curl. The head is very small in proportion to the rest of the body. During the life of the animal the face is of a deep brown color, as are the ears, cheeks, and chin, on which some long black hairs are scattered at distant intervals. Its lips are possessed of some mobility, but not equal to those of the chimpanzee or orang-outan.

The most notable monkey of this prehensile-tailed group is the Coaita (*Ateles paniscus*), an excellent figure of which is presented on next page. It is difficult to conceive of any animal so spider-like in its movements. From this remarkable resemblance to a crawling spider as it moves over branches, putting forth its long snake-like tail and its limbs, it has received the name of Spider Monkey. The limbs are slender and singularly attenuated, and the tail is essentially a fifth arm. The latter member is considerably longer than the body; its extremity upon the inner surface is soft and like the sensitive inside of the fingers, and is, practically, a very supple and serviceable finger. It is carried with exceeding grace as he advances, and is ever

the *avant courier* of all his movements. One is constantly reminded of the elephant's proboscis, so adroitly does he present this fifth clasping member at every move.

So completely adapted is this species or group of monkeys to arboreal life, it is equally unfitted for locomotion on the ground. So eminently is this tree-top existence his natural condition, he would be nearly undone and quite miserable away from it. Its almost requisite element seems to be an unbroken forest. This it has, in all the grandeur of immensity. The Brazilian and tropical belt of woodland, which extends nearly from ocean to ocean, the width of the continent, is his. Some of the marine mammals would be but little more embarrassed out of their appropriate element, than the Spider Monkey deprived of the friendly branching trees.

We have witnessed the movements of this monkey at the zoological collection in Central Park, and in one instance there were two, a male and a female. The male seemed to be inces-

COAITA.—*Ateles paniscus*

santly teasing his mate. The latter seemed to care little for the fun, but at times, when rudely jerked from the floor by the long up-raised tail, she joined in the race and contributed to a most astonishing display of calisthenics.

The male of this pair was one of the most slender of its kind. On the wire screen of its great cage it spread itself out like a "Daddy-long-legs," impressing us much as that insect does, with its strange, furtive movements. Now one passes hand over hand along the horizontal bar, never once omitting a convenient contact of the tail-tip, which clasps a similar bar above, and slides along its surface as we lead our hand down a stair-rail, ready to grasp it at any moment. A sudden caprice, and his body drops; suspended by the tail he swings to and fro, glancing aimlessly, in the manner of all monkeys—in short, looking altogether as if he was doubtful what to do next. In this moment of indecision, he suddenly entertains the notion that his mate needs stirring up; whereupon he drops upon the floor, instantly stands erect, extends his long arms high above his head as a balance-weight, and strides off more human-like than the great Apes, that are much nearer man in the scale of being.

This monkey is credited with the faculty of robbing nests of birds that build in fancied security in the hollow trunks of dead trees. He introduces his tail into the aperture, grasps the egg with the sensitive, finger-like tip, and passes the morsel with a flourish to his mouth.

Five specimens of the several species of Spider Monkeys are in the American Museum of Natural History, where the reader may see the most excellent representative collection; embracing all of the principal forms. At no distant day this collection will contain as nearly a perfect series of Primates, which include all of the monkey races, from the gorilla and the two large species, orang and chimpanzee, to the lowest, as can be obtained. The grand examples of the three latter forms are now in the museum, and well repay a visit to them.

The COAITA, or QUATA, as the word is frequently written, resembles the chameck in many characteristics.

It is one of the best known of this group of animals, which are called by the name of Spider Monkeys, on account of their long sprawling limbs, and their peculiar action while walking.

It is very remarkable, that although these creatures appear to be much less calculated for bipedal locomotion than the large apes, they should really be better walkers than most of the monkey tribe. When placed on a level surface and desirous to walk in an erect position, they always attempt to aid their tottering steps by means of their prehensile tails, which they twine about in every direction in the hope of grasping some object by which to help themselves along. But when they find that all chances of external support are vain, they bravely throw themselves on their own resources, and, using their tail as a balance, move along with tolerable ease.

The mode in which they apply the tail to this unexpected use is by raising it up behind until it is on a level with the head, and then curling the tip of it downwards, so as to form the figure of a letter "S."

The spider monkeys can apply the tail to uses far more remarkable than any of those which have been mentioned. With such singularly delicate sense of touch is it furnished, that it almost seems to be possessed of the power of sight, and moves about among the branches with as much decision as if there were an eye in its tip. Should the monkey discover some prize, such as a nest of eggs, or any little dainty, which lies in a crevice too small for the hand to enter, it is in nowise disconcerted, but inserts the end of its tail into the cranny, and hooks out the desired object.

It is impossible to contemplate this wonderful provision of nature without a feeling of admiration at the manner in which the most unlikely portions of an animal are developed for the purpose of performing sundry uses. There seems to be a curious parallel between the elephant's trunk and the spider monkey's tail, being developments of the two opposite extremes of the body, the former belonging to the Old World and the latter to the New.

There is a wonderful resemblance in the use to which these members are put, excepting of course those discrepancies that must arise from the different natures of the organs, and the habits of the animals to which they belong. Even in external form the proboscis and the tail are marvellously similar; so much so, indeed, that an outline of one would almost serve as a sketch of the other. Each is gifted with discriminating faculty of touch, and therefore able to pick up any small object; while at the same time its muscular powers are so great, that it can endure severe and prolonged exertion.

The proboscis of the elephant can seize a tree-branch and tear it from its parent trunk. The spider monkey has no such gigantic strength, but it can sling itself from a bough by its tail, and remain suspended for almost any length of time. There is a beautiful formation of the tail of this creature, by means of which the grasp of that member retains its hold even after the death of the owner. If a spider monkey is mortally wounded, and not killed outright, it curls its tail round a branch, and thus suspended yields up its life. The tail does not lose its grasp when the life has departed; and the dead monkey hangs with its head downwards for days, until decomposition sets in and the rigid muscles are relaxed.

We may here trace another curious analogy between this automatic contraction of the tail, and the well-known structure by which a bird is enabled to hold itself on its perch during sleep. If the spider monkey's tail be drawn out till it is straightened, the tip immediately curls round, and remains so until the member is suffered to return to its usual curve. Perhaps one reason for this provision may be, that it is for the purpose of retaining the animal in its arboreal residence, and guarding it against a fall.

Still, it is a curious fact, and cannot be wholly accounted for on those grounds; for the monkeys of the Old World, although not gifted with prehensile tails, are quite as arboreal as their brethren of the New, and consequently as liable to Eutychian casualties. It may be remarked, *en passant*, that there are Preacher Monkeys in America, and consequently that an especial provision against such misfortunes may be more requisite in Brazil than in Africa.

In their native country, the spider monkeys may be seen in great profusion, swinging from the tree-branches in groups, like bunches of enormous fruits.

They are very lazy animals, and will sit, swing, or recline for hours in the strangest attitudes without moving a limb; just as if they were striving to emulate the Hindoo Fakirs in their motionless penances. Such a propensity is the more curious, because the slight forms of the animals, their long and slender limbs, and above all, their wonderful tail, would lead us to anticipate the same singular swiftness and activity that are found in the gibbons. In the American monkeys, however, we do not find the capacious chest and thin flanks which mark out the character of the gibbons.

Yet, when aroused by hunger or other sufficient motive, the spider monkeys can move fast enough; and in such a manner, that nothing without wings can follow them. In their native land, the forests are so dense and so vast, that if it were not for the rivers which occasionally cut their path through the dark foliage, the monkeys could travel for hundred of miles without once coming to the ground.

Not that the monkeys care very much for a river, provided that the distance between the banks is not very great; and as they detest going into the water, they most ingeniously contrive to get over without wetting a hair. The manner in which they are said to achieve this feat of engineering is as follows.

When a marching troop, often amounting to a hundred or more, arrives at the bank of a river, the principal body halts, while the oldest and most experienced of their band run forward, and carefully reconnoitre the locality. After mature deliberation they fix on some spot where the trees of the opposite banks incline riverwards, and approximate nearest to each other.

Running to the overhanging boughs, the most powerful monkeys twist their tails firmly round the branch, and permit themselves to hang with their heads downwards. Another monkey then slides down the body of the first, twines his tail tightly round his predecessor, and awaits his successor. In this way a long chain of monkeys is gradually formed, until the last, who is always one of the strongest of the troop, is able to plant his paws on the ground. He then begins to push the ground with his hands, so as to give the dependent chain a slight oscillating movement, which is increased until he is able to seize a branch on the opposite side of the river.

Having so done, he draws himself gradually up the branches, until he finds one that is sufficiently strong for the purpose in view, and takes a firm hold of it. The signal is then given that all is ready, and the rest of the band ascend the tree, and cross the river by means of this natural suspension bridge.

So far, so good! The monkeys run over the bridge easily enough; but how is the bridge itself to get over? Their plight is very like that of the man who invented a system of iron doors to be closed from the interior, and who, after closing them in the most admirable and effectual manner, was obliged to open them again in order to get out.

Still, whatever may be the case with human beings, when monkeys are clever enough to make such a bridge, they are at no loss to achieve the passage of the bridge itself.

Two or three of the stoutest keep themselves in reserve for this emergency, and, attaching themselves to the last links of the living chain, relieve their comrade from his arduous task of

clutching the boughs, and at the same time slightly lengthen the chain. They then clamber up the tree as high as the chain will stretch, or the boughs bear the strain, and take a firm hold of a tough branch. A second signal is now given, and the monkey on the opposite bank relaxing his hold, the entire line of monkeys swings across the river, perhaps slightly ducking the lowermost in the passage. Once arrived, the lower monkeys drop to the ground, while the others catch at branches, and break their connection with the much-enduring individual at the top. When the last monkey has secured itself, the leaders descend the tree, and the whole troop proceed on their march.

Those who have witnessed this curious scene, say that it is a most amusing affair, and that there is a considerable comic element in it, on account of the exuberant spirits of the younger and less staid individuals, who delight in playing off little practical jokes on the component parts of the bridge in their passage; knowing that there is no opportunity for immediate retaliation, and trusting to escape ultimately in the confusion that follows the renewal of the march.

The Coaita is by no means a large animal, measuring very little more than a foot from the nose to the root of the tail, while the tail itself is two feet in length. Its color is very dark and glossy; so dark, indeed, as to be almost black. The hair varies much in length and density. On the back and the outside of the limbs it hangs in long drooping locks, forming a thick covering through which the skin cannot be seen. But on the abdomen the hair is quite scanty, and is so thinly scattered that the skin is plainly visible. The skin of the face is of a dark copper color.

The Coaita seems to be as much averse to the intrusion of strangers into its domains as the African monkeys, whose proceedings have been already narrated. Banding together in large troops, these monkeys will assault a stranger with great vigor. Their first proceeding upon the approach of any intruder, whether man or beast, is to descend to the lower branches of their trees, and to satisfy themselves by a close inspection, whether the object be a friend or a trespasser. Having decided on the latter point of view, they re-ascend to their stronghold, and commence an assault by pelting with sticks, and keep up their attacks, until they fairly worry the intruder out of their dominions.

Another example of this wonderful group of monkeys is found in the MARIMONDA; an inhabitant, like the two last-named animals, of Central America, and found in greatest numbers in Spanish Guiana, where, according to Humboldt, it fills the place of the Coaita.

The general shape, the formation of its limbs, and the long prehensile tail, point it out at once as another of the spider monkeys. It is certainly a very appropriate name for these animals. Their heads are so small, their bodies so short, their limbs so slender, and their tail so limb-like, that the mind unconsciously draws a parallel between these monkeys and the long-legged spiders that scuttle so awkwardly over the ground, and are so indifferent respecting their complement of legs.

The resemblance holds good even when the monkey is at rest, or even when it only appears before the eye in an illustration. But when the creature begins to walk on level ground, and especially if it be hurried, its clumsy movements are so very spider-like, that the similitude is ten times more striking. Be it remarked, that both creatures are supposed to be placed in uncongenial circumstances. The spider is deft and active enough among the many threads of its air-suspended nets, as is the monkey among the slight twigs of the air-bathed branches. But when both animals are subjected to circumstances which are directly opposed to their natural mode of existence, they become alike awkward, and alike afford subjects of mirth.

The mode by which a spider monkey walks on level ground is rather singular, and difficult to describe, being different from that which is employed by the large apes. They do not set the sole of either paw, or hand, flat upon the ground, but, turning the hinder feet inwards, they walk upon their outer sides. The reverse process takes place with the fore-paws, which are twisted outwards, so that the weight of the animal is thrown upon their inner edges.

It will easily be seen how very awkward an animal must be which is forced to employ so complicated a means for the purpose of locomotion. Although it has been already stated that

the spider monkey has been known to walk in a manner much more steady than that of any other monkey, yet it must be remembered that this bipedal progression was only employed for a few paces, and with a haven of rest in view in the shape of a window-sill, on which the creature could rest its hands.

In captivity, the Marimonda is a gentle and affectionate animal, attaching itself strongly to those persons to whom it takes a fancy, and playing many fantastic gambols to attract their attention. Its angry feelings, although perhaps easily roused, do not partake of the petulant malignity which so often characterizes the monkey race, and are quite free from the rancorous vengeance which is found in the baboons. Very seldom does it attempt to bite, and even when such an event does take place, it is rather the effect of sudden terror than of deliberate malice.

THE MIRIKI.—*Brachyteles hypoxanthus.*

On account of its amiable nature it is often brought into a domesticated state, and, if we may give credence to many a traveller, is trained to become not only an amusing companion, but an useful servant.

The color of this animal varies much according to the age of the individual.

When adult, the leading color is of an uniform dull black, devoid of the glossy lustre which throws back the sunbeams from the coaita's furry mantle. On the back, the top of the head, and along the spine, the hair is of a dense, dead black, which seems to have earned for the animal the very inapposite name with which its nomenclators have thought fit to dedecorate the mild and amiable Marimonda.

The throat, breast, inside of the limbs, and the under side of the tail are much lighter in tint, while in some individuals a large, bright chestnut patch covers the latter half of the sides.

It seems to be of rather a listless character, delighting to bask in the sun's rays, and lying in the strangest attitudes for hours without moving. One of the postures which is most in vogue is achieved by throwing the head back with the eyes turned up, and then flinging the arms over the head.

There are several other species belonging to this group of animals, among which may be mentioned the Cayou, or Black Spider Monkey, the Chuva, the Brown Coaita, and others. The habits, however, of all these creatures are very similar, and therefore only one more example will be described. This is the Miriki, or Mono, as some authors call it.

The hair of this species is very thick, short, and furry, of a tolerably uniform brown tint over the head, body, and limbs, the paws being much darker than the rest of the animal. There is a slight moustache formed by a continuation of the long black hairs which are scantily planted on the chin and face. On account of the thick coating of fur with which the skin of this animal is covered, water has but little effect upon it. Knowing this wet-repellent property, the hunters of Brazil are accustomed to make the skin of the Miriki into cases wherewith to cover the locks of their guns in rainy days.

This species is easily distinguishable from its companions by the presence of a better developed thumb on the fore-paws than falls to the lot of spider monkeys generally.

I conclude the account of the spider monkeys with a few anecdotes of one of these animals, that have been kindly narrated to me by its owner, a captain in the British navy.

The monkey—a lady—to whom the name of Sally was given, was captured in British Guiana, and brought to the governor of Demerara, from whom it passed to its present gallant possessor. Sally seems to be a wondrous favorite, and to take in her owner's heart the place of a favorite child. There are many photographic portraits of this sable pet, three of which are at present before me, one representing Sally as lying contentedly in her master's lap, her little wrinkled face looking over his arm, and her tail twisted round his knees, while one hind-foot is grasping this appendage. A second portrait exhibits her standing on a pedestal, by the side of the captain's coxswain,—to whose care she was chiefly committed—her left arm flung lovingly round his neck, and her tail coiled several times round his right hand, on which she is partly sitting. In the third, she is shown standing by the side of the same man, with her foot upon his hand, and the tip of her tail round his neck, by way of a change.

In almost every case there is a slight blur in the monkey's form, owing to the difficulty in persuading so volatile an animal as a monkey to remain still for two seconds together. However, the proportions of the animal are well preserved, and its characteristic attitudes shown clearly enough.

She is a most gentle creature, only having been known to bite on two occasions, one of which was simply in self-defence. She had got loose in the dock yard at Antigua, and had been chased by the men for some time. At last she was hemmed into a corner, and would have been taken easily, had not the dockyard laborers rather feared her teeth. Her master, however, in order to prove that she was not dangerous, caught her, and was rewarded by a rather severe bite on his thumb. Had it not been, however, that poor Sally was terrified out of her senses by the pursuit of the laborers, she would not have behaved so badly.

So gentle was she in general, that whenever she received a slight correction for some fault, she would never attempt to retaliate, but only sidle away and accept the rebuke. Malice does not seem to be in her nature, for she soon forgets such injuries, and does not lose her kind feelings towards her corrector. Her master tells me that if any one gets bitten by her, it is entirely the fault of the sufferer, and not of the monkey.

On board ship she is not trammelled by chain or rope, but is permitted to range the vessel at her own sweet will. She revels among the rigging, and when she becomes playful, dances about a rope in such a strange manner, and flings her limbs and tail about so fantastically, that the spectators are at a loss to distinguish the arms and legs from the tail. When thus engaged, the name of spider monkey is peculiarly apposite, for she looks just like a great overgrown tarantula in convulsions. During these fits of sportiveness, she stops every now and then to shake her head playfully at her friends, and, screwing up her nose into a point, utters little, short, soft grunts at intervals. She generally becomes vivacious towards sunset.

There is a curious custom in which she is in the habit of indulging. She likes to climb up the rigging until she reaches a horizontal rope, or small spar, and then, hooking just the tip of her tail over it, will hang at full length, slowly swinging backward and forward, while she rubs each arm alternately from the wrist to the elbow, as if she were trying to stroke the hair the wrong way. She always must needs have her tail round something, and, if possible, would not venture a step without securing herself to some object by the means of that long and lithe member.

Unlike many of her relatives, who are inveterate thieves, and with the tips of their tails quietly steal objects from which their attention is apparently turned, Sally is remarkably honest, never having stolen anything but an occasional fruit or cake. She is accustomed to take her dinner at her master's table, and behaves herself with perfect decorum, not even beginning to eat until she has obtained permission, and keeping to her own plate like a civilized being. Her food is mostly composed of vegetables, fruit, and sopped bread, although she occasionally is treated to a chicken-bone, and appreciates it highly.

In the matter of food she is rather fastidious, and if a piece of too stale bread be given to her, smells it suspiciously, throws it on the floor, and contemptuously ignores its existence. With true monkey instinct, she is capable of distinguishing wholesome from harmful food,

and after she had left the tropical fruits far behind, she accepted at once an apple which was offered to her, and ate it without hesitation.

At Belize, Sally was permitted to range the town at large for some days. One morning, as her master was passing along the streets, he heard high above his head a little croaking sound, which struck him as being very like the voice of his monkey; and on looking up, there was Sally herself, perched on a balcony, croaking in pleased recognition of her friend below.

Once, and once only, poor Sally got into a sad scrape. Her master was going into his cabin, and found Sally sitting all bundled together on the door-mat. He spoke to her, and the creature just lifted up her head, looked him in the face, and sank down again in her former listless posture.

"Come here, Sally," said the captain.

But Sally would not move.

The order was repeated once or twice, and without the accustomed obedience.

Surprised at so unusual a circumstance, her master lifted her by the arms, and then made the shocking discovery that poor Sally was quite tipsy. She was long past the jovial stage of intoxication, and had only just sense enough left to recognize her master. Very ill was Sally that night, and very penitent next day.

The reason for such a catastrophe was as follows:—

The officers of the ship had got together a little dinner party, and being very fond of the monkey, had given her such a feed of almonds and raisins, fruits of various kinds, biscuits and olives, as she had not enjoyed for many a day. Now of olives in particular, Sally is very fond, and having eaten largely of these dainties, the salt juice naturally produced an intense thirst. So, when the brandy and water began to make its appearance, Sally pushed her lips into a tumbler, and to the amusement of the officers, drank nearly the whole of its cool but potent contents.

Her master remonstrated with the officers for permitting the animal to drink this strong liquid; but there was no necessity for expostulating with the victim. So entirely disgusted was the poor monkey, that she never afterwards could endure the taste or even the smell of brandy. She was so thoroughly out of conceit with the liquid that had wrought her such woe, that even when cherry-brandy was offered to her, the cherries thereof being her special luxury, she would shoot out her tongue, and with just its tip taste the liquid that covered the dainty fruits beneath, but would not venture further.

She seemed to bear the cold weather tolerably well, and was supplied with plenty of warm clothing which stood her in good stead even off the icy coasts of Newfoundland, where, however, she expressed her dislike of the temperature by constant shivering. In order to guard herself against the excessive cold, she hit upon an ingenious device. There were on board two Newfoundland dogs. They were quite young, and the two used to occupy a domicile which was furnished with plenty of straw. Into this refuge Sally would creep, and putting an arm round each of the puppies and wrapping her tail about them, was happy and warm.

She was fond of almost all kinds of animals, especially if they were small, but these two puppies were her particular pets. Her affection for them was so great, that she was quite jealous of them, and if any of the men or boys passed nearer the spot than she considered proper, she would come flying out of the little house, and shake her arms at the intruders with a menacing gesture as if she meant to annihilate them.

A kennel had been built for her special accommodation, but she never would go into it. She is a very nervous animal, and apparently has a great dislike to any kind of covering over her head. So she was accustomed to repudiate her kennel, and to coil herself up in the ham mock nettings, where she would sleep soundly. She was rather somnolent in character, giving up her eventide gambols soon after dark, and falling into a sound slumber from which she does not awake until quite late in the morning.

Her color was black, but it is remarkable, that once when she was ill, her jetty coat became interspersed with hairs of a red tint, imparting an unpleasant rusty hue to her furry mantle.

The next engraving represents an example of the celebrated group of HOWLING MONKEYS, or ALOUATTES as they are termed by some naturalists, whose strange customs have been so

often noticed by travellers, and whose reverberating cries rend their ears. Little chance is there that the Howling Monkeys should ever fade from the memory of any one who has once suffered an unwilling martyrdom from their mournful yells.

Few animals have deserved the name which they bear so well as the Howling Monkeys. Their horrid yells are so loud, that they can be heard plainly although the animals which produce them are more than a mile distant; and the sounds that issue from their curiously formed throats are strangely simulative of the most discordant outcries of various other animals—the jaguar being one of the most favorite subjects for imitation. Throughout the entire night their dismal ululations resound, persecuting the ears of the involuntarily wakeful traveller with their

HOWLING MONKEYS.—*Mycetes seniculus.*

oppressive pertinacity, and driving far from his wearied senses the slumber which he courts, but courts in vain. As if to give greater energy to the performance, and to worry their neighbors as much as possible, the Araguatos have a fashion of holding conversations, in which each member does his best to overpower the rest.

A similar custom is in vogue with many of the African and Asiatic monkeys, but with this difference. The above-mentioned animals certainly lift up their voices together, but then, each individual appears to be talking on his own account, so that the sound, although it is sufficiently loud to affect a listener's ears most unpleasantly, is disjointed and undecided.

But the Howlers give forth their cries with a consentaneous accord, that appears to be the result of discipline rather than of instinct alone.

Indeed, the natives assert that in each company, one monkey takes the lead, and acting as toast-master, or as conductor of an orchestra, gives a signal which is followed by the rest of the band. The result of the combined voices of these stentorian animals may be imagined.

And when the effect of this melancholy and not at all musical intermittent bellow is heightened by the silence of night and the darkness that hangs over the midnight hours in the dense forests, it may easily be supposed, that but little sleep would visit the eyes of one who had not served an apprenticeship to the unearthly sounds that fill the night air of these regions.

In order that an animal of so limited a size should be enabled to produce sounds of such intensity and volume, a peculiar structure of the vocal organs is necessary.

The instrument by means of which the Howlers make night dismal with their funestral wailings, is found to be the "hyoid bone," a portion of the form which is very slightly developed in man, but very largely in these monkeys. In man, the bone in question gives support to the tongue and is attached to numerous muscles of the neck. In the Howling Monkeys it takes a wider range of duty, and, by a curious modification of structure, forms a bony drum which communicates with the windpipe and gives to the voice that powerful resonance, which has made the Alouattes famous.

It is said by those who have been able to watch the habits of these creatures, that the howlings of the Alouattes are but nocturnal serenades addressed by the amorous monkeys to their arboreal lovers. It is proverbial that good taste, both in beauty and art, are dependent entirely upon race and date, and so the deafening yells of a band of howling Araguatos may be as pleasing in the ears of their listening mates as Romeo's loving words to Juliet in her balcony; or as, to bring the matter nearer our home and sympathies, the tender plaints of our favorite Tom-cat upon the housetop to his inamorata in the neighboring garden.

The howling monkeys are said to be less gentle than the spider monkeys, and to partake more of the baboon nature than any of their American brethren. From the fact of their large size, their formation of head and face, together with one or two other peculiarities, some naturalists have considered the Alouattes to be the Western representatives of the baboons that inhabit the Eastern continent.

There is rather an ingenious mode of capturing these monkeys, which is worthy of notice.

A certain plant, the "Lecythis," produces a kind of nut, which, when emptied of its contents, becomes a hollow vessel with a small mouth. Into one of these hollowed nuts a quantity of sugar is placed, the nut left in some locality where the monkey is likely to find it, and the monkey-catchers retreat to some spot whence they can watch unseen the effect of their trap.

So tempting an object cannot lie on the ground for any length of time without being investigated, by the inquisitive monkeys. One of them soon finds out the sweet treasure of the nut, and squeezes his hand through the narrow opening for the purpose of emptying the contents. Grasping a handful of sugar, he tries to pull it out, but cannot do so because the orifice is not large enough to permit the passage of the closed hand with its prize. Certainly, he could extricate his hand by leaving the sugar and drawing out his hand empty, but his acquisitive nature will not suffer him to do so. At this juncture, the ambushed hunters issue forth and give chase to the monkey. At all times, these monkeys are clumsy enough on a level surface, but when encumbered with the heavy burden, which is often as big as the monkey's own head, and deprived of one of its hands, it falls an easy victim to the pursuers.

All these monkeys are eaten by the inhabitants of these lands, being cooked upon an extempore scaffolding of hard wood. Their flesh is very dry indeed, so much so, that a monkey's arm has been preserved for many years only by being roasted over a fire.

They are not so playful in their habits as most of the monkey tribe, even when young preserving a solid gravity of demeanor. They are very numerous among the trees of their favorite resorts, as many as forty individuals having been seen upon one tree.

The Howlers (*Mycetes*) are represented by several interesting species. The characteristic feature of this group of monkeys is the development of the hyoid bone, which is so enlarged as to form a hollow bony vessel in the throat. By this arrangement of the vocal organs the creature is enabled to produce a hideous howling noise. They are large and heavy creatures, and have a very complete prehensile tail.

The CAPUCIN MONKEYS are active little animals, lively and playful. In habits, all the species seem to be very similar, so that the description of one will serve equally for any other.

In consequence of their youth and sportive manners they are frequently kept in a domesticated state, both by the native Indians and by European settlers. Like several other small monkeys, the Capucin often strikes up a friendship for other animals that may happen to live in or near its home, the cat being one of the most favored of their allies. Sometimes it carries its familiarity so far as to turn the cat into a steed for the nonce, and, seated upon her back, to perambulate the premises. More unpromising subjects for equestrian exercise have been pressed into the service by the Capucin. Humboldt mentions one of these creatures which was accustomed to catch a pig every morning, and, mounting upon its back, to retain its seat during the day. Even while the pig was feeding in the savannahs its rider remained firm, and bestrode its victim with as much pertinacity as Sindbad's old man of the sea.

CAPUCIN MONKEYS.

There is some difficulty in settling the species of the Capucins, for their fur is rather variable in tint, in some cases differing so greatly as to look like another species. The general tint of the CAPUCIN is a golden olive, a whiter fur bordering the face in some individuals, though not in all.

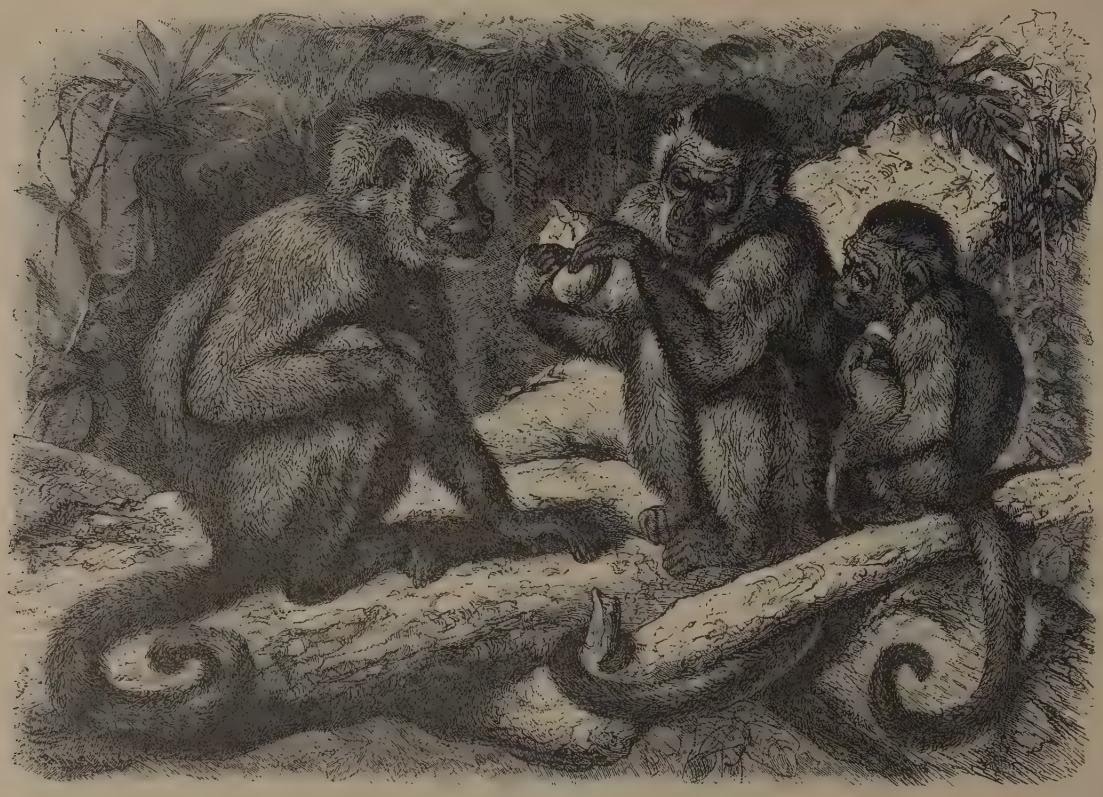
The HORNED CAPUCIN is much more conspicuous that the last-mentioned animal, as the erect fringe of hair that stands so boldly from the forehead points it out at once. When viewed in front, the hair assumes the appearance of two tufts or horns, from which peculiarity the creature derives its name. These horns are not fully developed until the monkey has attained maturity.

In color, too, it is rather different from the Capucin, having a constant tinge of red in it. The fur is mostly of a deep brown, but in some individuals resembles that peculiar purple black which is obtained by diluting common black ink with water, while in others the ruddy hue prevails so strongly as to impart a chestnut tint to the hair. The fringed crest is tipped with gray.

The last example of the Capucins which will be noticed in these pages, is the WEEPER MONKEY, or SAI.

As is the case with the two previously-mentioned animals, it is an inhabitant of the Brazils, and as lively as any of its congeners. The tails of the Capucins are covered with hair, but are still possessed of prehensile powers. All these monkeys seem to be possessed of much intelligence, and their little quaint ways make them great favorites with those who watch their motions.

Their food is chiefly of a vegetable nature, but they are fond of various insects, sometimes rising to higher prey, as was once rather unexpectedly proved. A linnet was placed, by way of experiment, in a cage containing two Capucin monkeys, who pounced upon their winged



SAI.—*Cebus capucinus.*

visitor, caught it, and the stronger of the two devoured it with such avidity that it would not even wait to pluck off the feathers. Eggs are also thought to form part of the Capucin's food.

The Capucins, so named from several of them having the head so decorated by hair as to resemble a monk's cowl. One little species, called Sai, is often seen in confinement as a pet. It is also called Weeper, from the fact that its eyes are usually suffused with tears. Monkeys that are usually seen exhibited in the streets are of this group; being very gentle and susceptible of considerable education of a certain character.

There is always much difficulty with regard to the names of various animals, as almost every systematic naturalist prefers a name of his own invention to one which has already been in use. It often happens, therefore, that the same creature has been burdened with ten or fifteen titles, given to it by as many writers. The chacma, for example, has been named "Cynocephalus porcarius" by one author, "Simia porcaria" by another, "Simia sphingiola" by a third, "Papio comatus" by a fourth, and "Cynocephalus ursinus" by a fifth. In order to avoid the great waste of valuable space that would be caused by giving a list of these various names, I only make use of the title by which each animal is designated in the catalogue of the British Museum, and under which name it may be found in that magnificent collection.

A very pretty genus of monkeys comes next in order, deriving from the beauty of their fur, the term Callithrix, or "beautiful hair." Sometimes these animals are called Squirrel Monkeys, partly on account of their shape and size, and partly from the squirrel-like activity that characterizes these light and graceful little creatures. The TEE-TEE, or TITI—as the name is sometimes given—is a native of Brazil, and is found in great numbers. Another name for the animal is the SAIMIRI.

The Tee-tees form a group, embracing many specimens, mostly small, and delicate in features. The most singular characteristic of these little monkeys is the habit of watching the countenance of its human attendants, as if they were striving to learn what is said to them.

The colors of the Tee-tee are very diversified. A grayish olive is spread over the body and limbs, the latter being washed with a rich golden hue. The ears are quite white, and the under surface of the body is whitish gray. The tip of the tail is black.

There are several species of Tee-tee, four of which are in the British Museum.

They are most engaging little creatures, attaching themselves strongly to their possessors, and behaving with a gentle intelligence that lifts them far above the greater part of the monkey race. Their temper is most amiable, and anger seems to be almost unknown to them. In the expression of their countenance, there is something of an infantine innocence, which impresses itself the more strongly when the little creatures are alarmed. Sudden tears fill the clear hazel eyes, and, by the little, imploring, shrinking gestures, they establish an irresistible claim on all kindly sympathies.

TEE-TEE.—*Callithrix personata.*

The Tee-tees have a curious habit of watching the lips of those who speak to them, just as if they could understand the words that are spoken, and when they become quite familiar are fond of sitting on their friend's shoulder, and laying their tiny fingers on his lips. They seem to have an intuitive idea of the empire of language, and to try, in their own little way, to discover its mysteries.

A pleasant musky odor exhales from these animals. Their beautiful, furry tails have no prehensile power, but can be wrapped about any object, or even coiled round their own bodies in order to keep them warm.

The CUXIO, or BEARDED SAKI, which is represented on page 88, is no less remarkable in its character than in its looks. It is savage in its temper, and liable to gusts of furious passion, during which it is apt to be a very unpleasant neighbor, for it has long sharp teeth, and does not hesitate to use them.

On examining this animal, the attention is at once drawn to the curious manner in which both extremities of the body are decorated.

The beard is of a dull black color, and is formed chiefly by hairs which start from the sides of the jaw and chin, and project forward in the curious fashion which gives the animal so strange an expression.

Of this ornament the Cuxio is mightily careful, protecting its facial ornament with a veneration equal to that beard-worship for which the mediæval Spanish noble was world-famous. It is even more fastidious in this respect than the Diana monkey, whose beard-protecting customs have been alluded to on page 43. The Diana will hold its beard aside when it drinks; but the more cautious Cuxio forbears to put its face near the water. Instead of drinking a deep draught by suction, as is the custom with most monkeys, it scoops up the liquid in the palm of its hand, and so avoids the danger of wetting its beard.

This curious habit, however, is but rarely witnessed, as the animal dislikes to exhibit its fastidiousness before spectators, and only when it thinks itself unwatched will it use its natural goblet. When in the presence of witnesses it drinks as do other monkeys, wetting its beard without compunction.

THE SAIMIRI.—*Callithrix sciurea.*

The general color of this monkey is a grizzled brown, sometimes speckled with rust-colored hairs, and the limbs, tail, and head are black. If, however, the hair of the body be blown aside, a grayish hair takes the place of the dark brown; for the hairs are much lighter towards their insertion, and in many cases are nearly white. The hair of the head is remarkable for the mode of its arrangement, which gives it an air as if it had been parted artificially. The long black hairs start from a line down the centre of the head, and fall over the temples so densely that they quite conceal the ears under their thick locks. The large quantity of hair that decorates the head and face increases the really great comparative size of the rounded head. The nostrils are rather large, and are separated from each other by a dividing cartilage which is larger than is usual even in the American monkeys.

The teeth are so sharp and the jaws so strong, that Humboldt has seen the animal, when enraged, drive its weapons deeply into a thick plank. When it suffers from a fit of passion, it grinds these sharp teeth, leaps about in fury, and rubs the extremity of its long beard. Even when slightly irritated, it grins with savage rage, threatening the offender with menacing grimaces, and wrinkling the skin of its jaws and face.

It is not known to live in companies, as is the wont of most American monkeys, but passes a comparatively solitary life, limiting its acquaintance to its partner and its family. The cry of this animal is rather powerful, and can be heard at a considerable distance. The color of the female Cuxio is not so dark as that of her mate, being almost wholly of a rusty brown. It is chiefly nocturnal in its habits.

There are several monkeys known by the name of Sakis, among which are reckoned the Cuxio, which has just been described, and two other species, which are easily distinguished from each other by the color of their heads. The first of these animals is the BLACK YARKE, or WHITE-HEADED SAKI, and the other the CACAJAO, or BLACK-HEADED SAKI.

The former of these Sakis is a rather elegant creature in form, and of color more varied than those of the Cuxio. As will be seen from the accompanying engraving, the head is sur-

rounded with a thick and closely-set fringe of white hair, which is rather short in the male, but long and drooping in the female. The top of the head is of a deep black, and the remainder of the body and tail is covered with very long and rather coarse hair of a blackish-brown. Under the chin and throat the hairs are almost entirely absent, and the skin is of an orange hue.

Beside the difference of length in the facial hairs of the female Yarke, there are several distinctions between the sexes, which are so decided as to have caused many naturalists to consider the male and female to belong to different species. The hair of the female Yarke is decorated near the tip with several rings of a rusty brown color, while the hair of the male is entirely devoid of these marks.

The natural food of these animals is said to consist chiefly of wild bees and their honey-combs. Perhaps the long furry hair with which the Sakis are covered, may be useful for the

BLACK YARKE.—*Pithecia leucocephala.*

purpose of defending them from the stings of the angry insects. On account of the full and bushy tail with which the members of this group are furnished, they are popularly classed together under the title of Fox-tailed Monkeys.

The two animals which have just been noticed are marked by such decided peculiarities of form and color that they can easily be distinguished from any other monkeys. The Cuxio is known by its black beard and parted hair, the Black Yarke by its dark body and white head-fringe, while the CACAJAO is conspicuous by reason of its black head and short tail.

When this animal was first discovered, it was thought that the tail had been docked either by some accident, or by the teeth of the monkey itself, as is the custom with so many of the long-tailed monkeys of the Old World. But the natives of the country where it lives assert that its brevity of tail is a distinctive character of the species. Indeed, among the many names which have been given to the Cacajao, one of them, "Mono Rabon," or short-tailed Mono, refers to this peculiarity. On account of the very short tail, and the general aspect of the animal, the Cacajao is supposed by some naturalists to be the American representative of the Magot.

The head of the creature is not only remarkable for its black hue, but for its shape, which, instead of being rounded, as is the case with most monkeys, is slightly flattened at the temples. The general color of the fur is a bright yellowish-brown, the only exceptions being the head and the fore-paws, which are black. The ears are devoid of hair, are very large in proportion to the size of the animal, and have something of the human character about them.

The length of the head and body is said to reach nearly two feet in full-grown animals, and the tail is from three to five inches long, according to the size of the individual.

Very little is known of the habits of the Cacajao in a wild state, but in captivity it bears the character of being a very inactive and very docile animal. Fruits seem to be its favorite diet, and when eating them it has a habit of bending over its food in a very peculiar attitude. It is not so adroit in handling objects as are the generality of monkeys, and seems to feel some difficulty in the management of its long and slender fingers, so that its manner of eating is rather awkward than otherwise.

Among the names by which this monkey is known, we may mention, "Mono-feo," or Hideous Monkey, Chucuto, Chucuzo, and Caruiri. The term "Melanocephala" signifies Black-headed, while the word "Leucocephala," which is applied to the Yarke, signifies White-headed.

CUXIO, OR BEARDED SAKI.—*Brachyurus Satanas.*

It seems to be a timid, as well as a quiet animal, as a Cacajao which had been domesticated displayed some alarm at the sight of several small monkeys of its own country, and trembled violently when a lizard or a serpent was brought before its eyes.

The localities where it is most generally found are the forests which border the Rio Negro and the Cassiquiare, but it does not seem to be very plentiful even in its own land.

The Cuxio or Saki (*Brachyurus*) belongs to a group having singular developments of tail and beard. The former member is often very thickly beset with hairs, and altogether it resembles a large pompon. The beard is extremely large and bushy.

The White-headed Saki resembles an old colored man with a full head of silvery hair.

Other species are characterized by very short tails. The White Acari (*Ouarkaria calva*) is much in request by the natives of Tapura, South America. They shoot them with poisoned arrows, and then immediately restore them by applying salt to their mouths.

Some small monkeys belonging to another group are represented by the more familiar little creature called Douroucouli (*Nyctipithecus trivergatus*). The first systematic term refers to their nocturnal habits, meaning literally, night-monkey. The eyes are very large, and the hair of the orbit is arranged much as it is on the owls. They are so sensitive to light, that it cannot endure the glare of day, and only awakes to activity and energy when the shades of night throw their welcome veil over the face of nature. At night the woods resound with cries of *duruculi*, which has given rise to the trivial name of the monkey.

In its wild state, it seeks the shelter of some hollow tree or other darkened place of refuge, and there abides during the hours of daylight, buried in a slumber so deep, that it can with difficulty be aroused, even though the rough hand of its captor drag it from its concealment. During sleep it gathers all its four feet closely together, and drops its head between its forepaws. It seems to be one of the owls of the monkey race.

The food of this Douroucouli is mostly of an animal nature; and consists chiefly of insects and small birds, which it hunts and captures in the night season. After dark, the Douroucouli awakes from the torpid lethargy in which it has spent the day, and shaking off its drowsi-

ness, becomes filled with life and spirit. The large dull eyes, that shrank from the dazzling rays of the sun, light up with eager animation at eventide; the listless limbs are instinct with fiery activity, every sense is aroused to keen perception, and the creature sets off on its nightly quest. Such is then its agile address, that it can capture even the quick-sighted and ready-winged flies as they flit by, striking rapid blows at them with its little paws.

The general color of the Douroucouli is a grayish-white, over which a silvery lustre plays in certain lights. The spine is marked with a brown line, and the breast, abdomen, and inside of the limbs, are marked with a very light chestnut, almost amounting to orange. The face is remarkable for three very distinct black lines, which radiate from each other, and which have earned for the animal the title of "Trivergatus," or "Three-striped." There are but very slight external indications of ears, and in order to expose the organs of hearing, it is necessary to draw aside the fur of the head. On account of this peculiarity, Humboldt separated the Douroucouli from its neighbors, and formed it into a distinct family, which he named "Aötes," or "Earless."

NIGHT-MONKEY, OR DOUROUCOULI.—*Nyctipithecus trivirgatus.*

Guiana and Brazil are the countries where this curious little animal is found. Although by no means an uncommon species, it is not taken very plentifully, on account of its monogamous habits. The male and his mate may often be discovered sleeping snugly together in one bed, but never in greater numbers, unless there may be a little family at the time. Its cry is singularly loud, considering the small size of the animal which utters it, and bears some resemblance to the roar of the jaguar. Besides this deep-toned voice, it can hiss or spit like an angry cat, mew with something of a cat-like intonation, and utter a guttural, short, and rapidly repeated bark. The fur is used for the purpose of covering pouches and similar articles.

The beautiful little creature which is so well known by the name of the MARMOSET, or OUISTITI, is a native of the same country as the Douroucouli, and is even more attractive in its manners and appearance. The fur is long and exquisitely soft, diversified with bold stripes of black upon a ground of white and reddish-yellow. The tail is long and full; its color is white, encircled with numerous rings of a hue so deep that it may almost be called black. A radiating tuft of white hairs springs from each side of the face, and contrasts well with the jetty hue of the head.

On account of the beauty of its fur, and the gentleness of its demeanor when rightly treated, it is frequently brought from its native land, and forced to lead a life of compelled civilization in foreign climes. It is peculiarly sensitive to cold, and always likes to have its house well furnished with soft and warm bedding, which it piles up in a corner, and under which it delights to hide itself.

The Marmosets do not seem to be possessed of a very large share of intelligence, but yet are engaging little creatures if kindly treated. They are very fond of flies and other insects, and will often take a fly from the hand of the visitor. One of these animals with whom I struck up an acquaintance, took great pleasure in making me catch flies for its use, and taking them daintily out of my hand. When it saw my hand sweep over a doomed fly, the bright eyes sparkled with eager anticipation; and when I approached the cage, the little creature thrust its paws through the bars as far as the wires would permit, and opened and closed the

tiny fingers with restless impatience. It then insinuated its hand among my closed fingers, and never failed to find and to capture the imprisoned fly.

When properly tamed, the Marmoset will come and sit on its owner's hand, its little paws clinging tightly to his fingers, and its tail coiled over his hand or wrist. Or it will clamber up his arm and sit on his shoulders, or if chilly, hide itself beneath his coat, or even creep into a convenient pocket.

The Marmoset has a strange liking for hair, and is fond of playing with the locks of its owner. One of these little creatures, which was the property of a gentleman adorned with a large bushy beard, was wont to creep to its master's face, and to nestle among the thick masses of beard which decorated his chin. Another Marmoset, which belonged to a lady, and which

GROUP OF MARMOSETS.

was liable to the little petulances of its race, used to vent its anger by nibbling the end of her ringlets. If the hair were bound round her head, the curious little animal would draw a tress down, and bite its extremity, as if it were trying to eat the hair by degrees. The same individual was possessed of an accomplishment which is almost unknown among these little monkeys, namely, standing on its head.

Generally the Marmoset preserves silence; but if alarmed or irritated, it gives vent to a little sharp whistle, from which it has gained its name of Ouistiti. It is sufficiently active when in the enjoyment of good health, climbing and leaping about from bar to bar with an agile quickness that reminds the observer of a squirrel.

Its food is both animal and vegetable in character; the animal portion being chiefly composed of various insects, eggs, and it may be, an occasional young bird, and the vegetable diet ranging through most of the edible fruits. A tame Marmoset has been known to pounce upon a living gold fish, and to eat it. In consequence of this achievement, some young eels were

given to the animal, and at first terrified it by their strange writhings, but in a short time they were mastered, and eaten.

Cockroaches are a favorite article of food with the Marmoset, who might be put to good service in many a house. In eating these troublesome insects, the Marmoset nips off the head, wings, and bristly legs, eviscerates the abdomen, and so prepares the insect before it is finally eaten. These precautions, however, are only taken when the cockroach is one of the larger specimens, the smaller insects being eaten up at once, without any preparation whatever.

Several instances of the birth of young Marmosets have taken place in Europe, but the young do not seem to thrive well in these climates. The color of the young animal is a dusky gray, without the beautiful markings which distinguish them when adult, and the tail is destitute of hair.

The length of the full-grown Marmoset is from seven to eight inches, exclusive of the tail, which measures about a foot.

Among the elegant little animals which are represented in the preceding page are members of the same genus as the Marmoset, inhabitants of nearly the same localities, and possessed of many similar qualities.

THE PINCHE.—*Hapale œdipus.*

The PINCHE is remarkable for the tuft of white and long hair which it bears on its head, and which is so distinctly marked, that the little creature almost seems to be wearing an artificial head of hair. The throat, chest, abdomen, and arms, are also white, and the edges of the thighs are touched with the same tint. On each shoulder there is a patch of reddish-chestnut, fading imperceptibly into the white fur of the chest, and the grayish-brown hair that covers the remainder of the body. Its eyes are quite black.

The tail of the animal is long and moderately full; its color slightly changes from the russet-brown tint with which it commences, to a deeper shade of brownish-black. Its voice is soft and gentle, and has often been compared to the twittering of a bird.

The Pinche is quite as delicate in point of health as its slight form seems to indicate, and can with difficulty endure the privations of a voyage. When the animal is full-grown, the length of its head and body is about eight inches, and that of its tail rather exceeding a foot.

Among the various members of the money tribe, there is hardly any species that can compare with the exqisite little MARIKINA, either for grace of form, or soft beauty of color.

The hair with which this creature is covered is of a bright and lustrous chestnut, with a golden sheen playing over its long glossy locks. To the touch, the fur of the Marikina is peculiarly smooth and silken; and from this circumstance it is sometimes called the Silky Monkey.

Both for the texture and color of the hair, the name is happily chosen, for the tint of the Marikina's fur is just that of the orange-colored silk as it is wound from the cocoon, while in texture it almost vies with the fine fibres of the unwoven silk itself.

Another name for the same animal is the Lion Monkey, because its little face looks out of the mass of hair like a lion from out of his mane.

The color of the hair is nearly uniform, but not quite so. On the paws it darkens considerably, and it is of a deeper tint on the forehead and the upper surface of the limbs than on the remainder of the body. Some specimens are wholly of a darker hue. In no place is the fur very short; but on the head, and about the shoulders, it is of very great length in proportion to the size of the animal.

The Marikina is rightly careful of its beautiful clothing, and is fastidious to a degree about preserving its glossy brightness free from stain. Whether when wild, it keeps its own house clean, or whether it has no house at all, is not as yet accurately ascertained; but in captivity, it requires that all cleansing shall be performed by other hands. This slothfulness is the more peculiar, because the creature is so sensitive on the subject, that if it be in the least neglected, it loses its pretty gaiety, pines away and dies.

MARIKINA.—*Jacchus rosalia.*

It is fond of company, and can seldom be kept alone for any length of time. The food of the Marikina is chiefly composed of fruits and insects; but in captivity, it will eat biscuit and drink milk. It is a very timid animal, unable to fight a foe, but quick in escape, and adroit in concealment. Its voice is soft and gentle when the animal is pleased, but when it is excited by anger or fear, it utters a rather sharp hiss. The dimensions of the Marikina are much the same as those of the Pinche.

The Marmosets (*Jacchus*) are represented by several species, all very small, and delicate in their features. They have much the same habits as the squirrels. Being so petite they readily climb out upon the slender branches of trees, where they rob nests of birds and prey upon their eggs.

The little caricatures of a lion seen in some of the species, are highly suggestive of the king of beasts in the full array of flowing mane.

THE LEMURS.

The form of the monkeys which are known by the name of Lemurs, is of itself sufficient to show that we are rapidly approaching the more quadrupedal mammalia, the which, however, we shall only reach through the wing-handed animals, or bats, and the strangely formed flying-monkey, which seems to span the gulf between the monkeys and bats.

The head of all the Lemurs is entirely unlike the usual monkey head, and even in the skull the distinction is as clearly marked as in the living being. Sharp, long, and pointed, the muzzle and jaws are singularly fox-like, while the general form of these animals, and the mode in which they walk, would lead a hasty observer to place them among the true quadrupeds. Yet, on a closer examination, the quadrumanous characteristics are seen so plainly, that the Lemurs can but be referred to their proper position among, or rather, at the end of, the monkey tribe.

The word Lemur signifies a night-wandering ghost, and has been applied to this group

of animals on account of their nocturnal habits, and their stealthy, noiseless step, which renders their progress almost as inaudible as that of the unearthly beings from whom they derive their name.

The RUFFED LEMUR is one of the handsomest of this family, challenging a rivalship even with the Ring-tailed Lemur in point of appearance.

The texture of the fur is extremely fine, and its color presents bold contrasts between pure white and a jetty blackness, the line of demarcation being strongly defined. The face of the Ruffed Lemur is black, and a fringe of long white hairs stands out like a ruff round the face, giving to the creature its very appropriate title.

RUFFED LEMUR.—*Lemur macaco.*

As is the case with all the Lemurs, it is a native of Madagascar and of the adjacent islands, and seems to take the place of the ordinary monkeys. Of all the Lemurs this species is the largest, its size equalling that of a moderately grown cat. Its voice is a sepulchral, deep roar, peculiarly loud, considering the size of the animal, and can be heard at a great distance in the stilly night. As the Lemurs delight in gathering together in large companies, the effect of their united voices is most deafening. The eyes are furnished with a transverse pupil, which dilates as darkness draws on, enabling the creature to see even in a dark night, and to make search after their daily, or rather their nightly food.

This species is timid at the presence of man, and hides itself at the sound of his footsteps. But if pursued and attacked, it takes instant courage from despair, and flinging itself boldly on its antagonist, wages fierce battle. In the conflict, its sharp teeth stand it in good stead, and inflict wounds of no trifling severity.

It is easily tamed, and although it is not a very intellectual animal, it displays much gentle affection, readily recognizing its friends, and offering itself for their caresses, but avoiding the touch of those with whom it is not acquainted, or to whom it takes a dislike. It is very impatient of cold, and likes to sit before a fire, where it will perch itself for an hour at a time without moving, its attention solely taken up by the grateful warmth.

It is an active creature, being able to leap to some distance, and always attaining its mark with unfailing accuracy. While leaping or running rapidly, the tail is held in a peculiar and graceful attitude, following, indeed, Hogarth's line of beauty.

The RING-TAILED LEMUR, or MACAO, is at once recognizable by the peculiarity from which it derives its popular name.

It is not quite so large as the Ruffed Lemur, as it only measures a foot from nose to tail, the tail itself being some seven or eight inches in length. In captivity it soon becomes familiar, and when it chooses to exhibit its powers, is very amusing with its merry pranks. If several

individuals are confined in the same cage, they are fond of huddling together, and involving themselves in such a strange entanglement of tails, limbs, and heads, that until they separate, it is almost impossible to decide upon the number of the animals that form the variegated mass.

It sometimes breeds in confinement, and then affords an interesting sight. The young Lemur is not so thickly clothed as its mother, but makes up deficiencies in its own covering by burying itself in the soft fur of its parent. Many a time have I seen the little creature sunk deeply in the soft fur of its mother's back, and so harmonizing with her, that the child could hardly be distinguished from the parent. Sometimes it would creep under the mother, and cling with arms and legs so firmly, that although she might move about her cage, the little one was not shaken off, but held as firmly as Ulysses to the Cyclops' ram.

RING-TAILED LEMUR.—*Lemur catta.*

There is a curious structure in the hand and arm of this Lemur, bearing considerable analogy to the formation of the spider monkey's tail. By means of this construction of the limb, the fingers of the hand are closed when the arm is stretched out, so that the animal can suspend itself from a tree-branch, without incurring fatigue. It sometimes utters a sound which resembles the purring of a cat, and from that habit is derived the name of Cattus. The manner in which the dark spots and rings are distributed over the body and tail is well shown in the engraving, and need not be described.

The WHITE-FRONTED LEMUR derives its name from the patch of white hairs which appears on its forehead. Some naturalists suppose it to be the female of a similar animal on whose forehead a sable patch is substituted for the white, and is therefore called the Black-fronted Lemur. At present, however, the Black-fronted animal is considered to be a distinct species; and the only difference between the sexes of the White-fronted Lemur seems to be, that in the male animal the forehead and some other portions of the fur are white, while in the female they are of a light gray. The general color of the animal is a brownish chestnut, but in some examples a gray tint takes the place of the darker color.

It is a gentle and engaging creature, and not at all shy, even to strangers, unless they alarm it by loud voices or hasty gestures. It is possessed of great agility, climbing trees, and running among the branches with perfect ease, and capable of springing through a space of several yards. So gently does it alight on the ground after it leaps, that the sound of its feet can hardly be heard as they touch the ground.

The RED LEMUR possesses a fur which has somewhat of a woolly aspect, the hair separating into tufts, each of which is slightly curled. It is a beautifully decorated animal, displaying considerable contrast of coloring. The body, head, and the greater portion of the limbs, are of a fine chestnut, with the exception of a large white patch covering the back of the head and nape of the neck, and a smaller one in the midst of each foot. The face, the tail, and paws, are black, as is all the under side of the body. This latter circumstance is most remarkable, as it is almost a general rule that the under parts of animals are lighter in tint than the upper. Around the sides of the face, the hair is of a paler chestnut than that which covers the body.

In habits it is similar to the Lemurs which have already been described. Being naturally a nocturnal animal, it passes the day in a drowsy somnolence, its head pushed between its legs, and the long, bushy tail wrapped round its body, as if to exclude the light and retain the heat. Should it be accustomed to be fed during the daytime, it shakes off its slumber for the purpose of satisfying the calls of hunger; but even though urged by so strong an inducement, it awakes with lingering reluctance, and sinks to sleep again as soon as the demands of its appetite are satisfied. Its entire length is nearly three feet, of which the tail occupies about twenty inches. Its height is about a foot.

The curious animal which is known by the name of the DIADEM LEMUR, is generally thought to belong quite as much, if not more, to the Indris than to the Lemurs, and has, therefore, been placed by Mr. Bennett in a separate genus, which he names Propithecus.

PROPITHECE, OR DIADEM LEMUR.—*Propithecus diadema.*

The name of Diadem Lemur is given to this creature on account of the white semi-lunar stripe which runs across the forehead; the curve being just the opposite to the crescent on the head of the Diana monkey, and therefore assuming the shape of a diadem. This white stripe is very conspicuous, and serves by its bold contrast with the black head and face, to distinguish the animal from any of its relatives. The shoulders and upper part of the back are of a sooty tint, not so black as the head, and fading almost imperceptibly into palest brown on the hinder quarters and the limbs. The under parts of the body are very light gray, nearly white. The paws are nearly black. The tail is tawny at its commencement, but gradually changes its color by the admixture of lighter hairs, until at its tip it is nearly white, although with a slight golden tinge.

The hair of the tail is not so long as that of the body, which is long and rather silky in texture, with the exception of the fur about the lower end of the spine, which has a slight woolliness to the touch. As may be seen from the engraving, the thumbs of the hinder paws

are large in proportion, and suited for taking a firm grasp of any object to which the animal may cling; while the corresponding members of the fore-paws are not so largely developed, but yet can be used with some freedom. The face of the Propithece is not so long as that of the true Lemurs, and the round tipped ears are hidden in the bushy hair which surrounds the head. The length of the animal, exclusively of the tail, is about twenty-one inches, and the length of the tail is about four inches less.

Resembling the Lemurs in many respects, and given to similar customs, the animals which are known by the name of Loris are distinguished from the Lemurs by several peculiarities of structure.

The first point which strikes the eye of the observer, is the want of that long and bushy tail which is possessed by the Lemurs, and which is only rudimentary in the Loris. The muzzle too, although sharp and pointed, is abruptly so, whereas that of the Lemur tapers gradually from the ears to the nose. The country which they inhabit is not the same as that which nurtures the Lemurs, for whereas the latter animals are found exclusively in Madagascar, the Loris is found in Ceylon, Java, Sumatra, and other neighboring parts.

SLENDER LORIS.—*Stenops gracilis.*

The Slender Loris is a small animal, measuring only nine inches in length, and possessed of limbs so delicately slender, as to have earned for it the popular name by which it is distinguished from the Slow-paced Loris. Its color is gray, with a slight rusty tinge, the under portions of the body fading into white. Round the eyes, the fur takes a darker hue, which is well contrasted by a white streak running along the nose.

Small though it be, and apparently without the power to harm, it is a terrible enemy to the birds and insects on which it feeds, and which it captures, "like Fabius, by delay."

The Slow-paced Loris, or Kukang, is very similar in its habits to the animal just mentioned, but differs from it in size, color, and several parts of its form.

The fur is of a texture rather more woolly than that of the Slender Loris, and its color has something of a chestnut tinge running through it, although some specimens are nearly as gray as the Slender Loris. As may by seen from the engraving on page 97, a dark stripe surrounds the eyes, ears, and back of the head, reaching to the corners of the mouth. From thence it runs along the entire length of the spine. The color of this dark band is a deep chestnut. It is rather larger than the preceding animal, being a little more than a foot in length.

In the formation of these creatures some very curious structures are found, among which is the singular grouping of arteries and veins in the limbs.

Instead of the usual tree-like mode in which the limbs of most animals are supplied with blood,—one large trunk-vessel entering the limb, and then branching off into numerous subdivisions,—the limbs of the Loris are furnished with blood upon a strangely modified system. The arteries and veins as they enter and leave the limb, are suddenly divided into a great number of cylindrical vessels, lying close to each other for some distance, and giving off their

tubes to the different parts of the limb. It is possible that to this formation may be owing the power of silent movement and slow patience which has been mentioned as the property of these monkeys, for a very similar structure is found to exist in the sloth.

In captivity, this Loris appears to be tolerably omnivorous, eating both animal and vegetable food, preferring, however, the former. Living animals best please its taste, and the greatest dainty that can be offered to the creature is a small bird, which it instantly kills, plucks and eats entirely, the bones included. Eggs are a favorite food with it, as are insects. It will take butcher's meat, if raw, but will not touch it if cooked in any way. Of vegetable substances, sugar appears to take its fancy the most, but it will eat fruits of various kinds, such as oranges and plantains, and has been known to suck gum arabic.

Another curious inhabitant of Madagascar is the INDRI, or AVAHI, a creature that has sometime been considered as one of the lemurs, and placed among them by systematic natu-

KUKANG, OR SLOW-PACED LORIS.—*Stenops tardigradus.*

ralists. From the curled and woolly hair with which the body is covered it derives its name of "Laniger," or Wool-bearer. Just over the loins, and partly down the flanks, the soft wool-like hair takes a firmer curl than is found to be the case in any other part of the body or limbs. It is but a small animal, the length of its head and body being only a foot, and its tail nine inches. The general color of the fur is a lightish brown, with a white stripe on the back of the thigh, and a tinge of chestnut in the tail. In some individuals a rusty red, mingled with a yellow hue, takes the place of the brown; and in all the under parts are lighter than the upper. Its face is black, and the eyes are gray, with a greenish light playing through their large orbs.

The name Indri is a native word, signifying, it is said, "man of the woods." Its voice is not very powerful, but can be heard at some distance. It is of a melancholy, wailing character, and has been likened to the cry of a child.

The LITTLE GALAGO is sometimes called by the name of the Madagascar Rat, on account of its rat-like form, and the color of the fur. It is about the size of a small rat, and might easily be mistaken for one of those animals by a non-zoologist. The tint of its fur is a very light mouse-color.

AVAHI, OR INDRI.—*Indris laniger.*

The ears of the Galago are large, and, during the life of the animal, are nearly transparent. The eyes are very large, and of that peculiar lustre which is always seen in the nocturnal animals. It is a native of Madagascar.

The MOHOLI GALAGO is a larger animal than the preceding, being nearly sixteen inches in length, inclusive of the tail. Its color is gray, with irregular markings of a deeper hue. The under parts of the body are nearly white, and the limbs are slightly tinged with a golden lustre. The tail is not very bushy, excepting at the extremity, and its color is a chestnut brown. The texture of the fur is very soft, and there is a slight woolliness in its setting.

Nocturnal in habits, it sleeps during the day, with its large ears folded over the head in such a manner as to give it the aspect of an earless animal. More active than the loris, the Moholi does not secure its prey by stealing on it with slow and silent movements, but leaps upon the flying insects on which it loves to feed, and seizes them in its slender paws. Besides insects, various fruits form part of the Moholi's food, more especially such as are of a pulpy nature, and it is said that the Moholi eats that vegetable exudation which is known by the name of Gum-Senegal. Its diurnal repose is taken in the curious nest which it builds in the forked branches of trees, using grass, leaves, and other soft substances for the purpose. In this lofty cradle the young are nurtured until they are of an age to provide for themselves.

THE GALAGO.—*Otolicnus galago.*

The face is full of expression, in which it is aided by the large and prominent ears; and the creature is said to contract its countenance into strange grimaces, after the fashion of the ordinary monkeys. Like the monkeys, too, it can leap for some little distance, and springs from one branch to another, or from tree to tree with agility and precision. The Moholi Galago is an inhabitant of Southern Africa, having been found by Dr. Smith hopping about the branches of the trees that bordered the Limpopo river, in twenty-five degrees of south latitude.

At first sight, there is some external resemblance between the Galago and the little animal which is figured on page 99. The ears, however, are not so large

as those of the Galago, and the tail is less thickly covered with fur, being almost devoid of hair, except at its extremity, where it forms a small tuft. On reference to the figure, it will be seen that the hands are of extraordinary length, in proportion to the size of the creature. This peculiarity is caused by a considerable elongation of the bones composing the "Tarsus," or back of the hands and feet, and has earned for the animal the title of TARSIER. This peculiarity is more strongly developed in the hinder than in the fore-paws.

The color of the Tarsier is a grayish-brown, with slight olive tint washed over the body. A stripe of deeper color surrounds the back of the head, and the face and forehead are of a warmer brown than the body and limbs.

It is a native of Borneo, Celebes, the Philippine Islands, and Banca. From the latter locality it is sometimes called the Banca Tarsier. Another of the titles by which it is known, is the Podji.

It is a tree-inhabiting animal, and skips among the branches with little quick leaps that have been likened to the hoppings of a frog. In order to give the little creature a firmer hold of the boughs about which it is constantly leaping, the palms of the hands are furnished with several cushions. The back of the hands are covered with soft downy fur, resembling the hair with which the tail is furnished. Excepting on the hands and tail, the fur is very thick and of a woolly character, but at the root of the tail, and at the wrists and ankles, it suddenly changes to the short downy covering.

The true position of that very rare animal the AYE-AYE, seems very doubtful, some naturalists placing it in the position which it occupies in this work, and others, such as Van der Hoeven, considering it to form a link between the monkeys and the rodent animals.

TARSIER.—*Tarsius spectrum.*

As will be seen by a reference to the figure, in its head and general shape it resembles the Galagos, but in the number and arrangement of its teeth it approaches the rodent type. There are no canine teeth, and the incisors are arranged in a manner similar to those of the rodents, the chief difference being that, instead of the chisel-like edge which distinguishes the incisor teeth of the gnawing animals, those of the Aye-aye are sharply pointed. These curious teeth are extremely powerful, and are very deeply set in the jaw-bones, their sockets extending neary the entire depth of the bone.

The color of the animal is a rusty brown on the upper portions of the body, the under parts, as well as the cheeks and throat, being of a light gray. The paws are nearly black. The fur of the body is thickly set, and is remarkable for an inner coating of downy hair of a golden tint, which sometimes shows itself through the outer coating. On the tail the hair is darker than on the body, greater in length, and in texture much coarser. The tail seems to be always trailed at length, and never to be set up over the body, like the well-known tail of the squirrel. The ears are large, and nearly destitute of hair.

It is probable that the natural food of the Aye-aye, like that of the preceding animals, is of a mixed character, and that it eats fruit and insects indiscriminately. In captivity it usually ate boiled rice, which it picked up in minute portions, like Amine in the "Arabian Nights," using, however, its slender fingers in lieu of the celebrated bodkin with which she made her mock meal. But in its wild state it is said to search the trees for insects as well as fruits, and to drag their larvæ from their concealment by means of its delicate fingers. Buds and various fruits are also said to be eaten by this animal—possibly the buds may contain a hidden grub, and the entire flower be eaten for the sake of the living creature which it contains, as is the case with many a bud that is plucked by small birds in this country.

THE AYE-AYE.—*Chiromys madagascarensis.*

It is a nocturnal animal like the Galagos and Lemurs, and seeks its prey by night only, spending the day in sleep, curled up in the dark hollow of a tree, or in some similar spot, where it can retire from view and from light.

As is shown by the scientific name of the Aye-aye, it is a native of Madagascar, and even in that island is extremely scarce, appearing to be limited to the western portions of the country, and to escape even the quick eyes of the natives. Sonnerat, the naturalist, was the first to discover it, and when he showed his prize to the natives, they exhibited great astonishment at the sight of an unknown animal, and the exclamations of surprise are said to have given the name of Aye-aye to the creature. The name "Cheiromys," signifies "Handed Mouse," and is given to the animal because it bears some resemblance to a large mouse or rat which is furnished with hand-like paws instead of feet.

With the exception of the Aye-aye, all the Quadrumanous animals bear their mammæ upon the breast, and clasp their young to their bosoms with their arms. But in the Aye-aye, the milk-giving organs are placed on the lower portion of the abdomen, and thus a great distinction is at once made between this creature and the true quadrumana. Indeed, there are so many points of discrepancy in this strange being, that it is quite impossible to make it agree with the systematic laws which have hitherto been laid down, and naturalists place it in one order or another, according to the stress which they lay on different points of its organization.

The eyes are of a brownish-yellow color, and very sensitive to light, as may be expected in a creature so entirely nocturnal in its habits. The movements of the Aye-aye are slow and deliberate, though not so sluggish as those of the Loris. It is not a very small animal, measuring almost a yard in total length, of which the tail occupies one moiety.

On a review of this and the Lemurine monkeys, it can hardly fail to strike the observer that there must be something very strange in the climate or position of Madagascar—perhaps in both—that forbids the usual quadrumanous forms, and produces in their stead the Lemurs, the Indris, and the Aye-aye. So very little is known of this important island, that it may be the home of hitherto unknown forms of animal life, which, when brought under the observation of competent naturalists, would fill up sundry blanks that exist in the present list of known animals, and afford, in their own persons, the clue to many interesting subjects which are now buried in mystery.

COLUGO.—*Galeopithecus volitans.*

The strange animal which is known by the name of the Flying Lemur, or Colugo, presents a singular resemblance to the large bat which is popularly called the Flying Fox, and evidently affords an intermediate link of transition between the four-handed and the wing-handed mammals.

By means of the largely-developed membrane which connects the limbs with each other, and the hinder limbs with the tail, the Colugo is enabled to leap through very great distances, and to pass from one bough to another with ease, although they may be situated so far apart that no power of leaping could achieve the feat. This membrane is a prolongation of the natural skin, and is covered with hair on the upper side as thickly as any part of the body, but beneath it is almost naked. When the creature desires to make one of its long sweeping leaps, it spreads its limbs as widely as possible, and thus converts itself into a kind of living kite. By thus presenting a large surface to the air, it can be supported in its passage between the branches, and is said to be able to vary its course slightly by the movement of its arms.

When the animal is walking or climbing about among the branches, the wide membrane is folded so closely to the body, that it might escape the observation of an inexperienced eye. The membrane is not used in the manner of wings, but is merely employed as a sustaining power in the progress through the air. It is evident, therefore, that at every leap, the spot at which it aims must be lower than that from which it starts, so that it is forced, after some few aërial voyages, to run up the trees and attain a higher station. It is said that the Colugo will thus pass over nearly a hundred yards.

A GROUP OF WATER BATS.

CHEIROPTERA;

OR, WING-HANDED ANIMALS.

THE Cheiroptera, literally Wing-handed Animals, are placed as ranking next after the Primates, though later authorities regard them as representing features of a more inferior grade. Over four hundred species of bats have been described, being distributed over the entire globe. In the family Phyllostomidæ thirty-one genera and sixty species are recorded. These are the leaf-nosed Bats, and are confined to the range east of the Andes, in Chili. The blood-sucking Vampires belong to this group.

In the group called the Short-headed Bats (*Noctilionidæ*), there are fourteen genera and fifty species. They range from Mexico and California to Chili.

The family *Vespertilionidæ* embraces eighteen genera and two hundred species, inhabiting various parts of the world ; in America as far north as Hudson's Bay and the Columbia River.

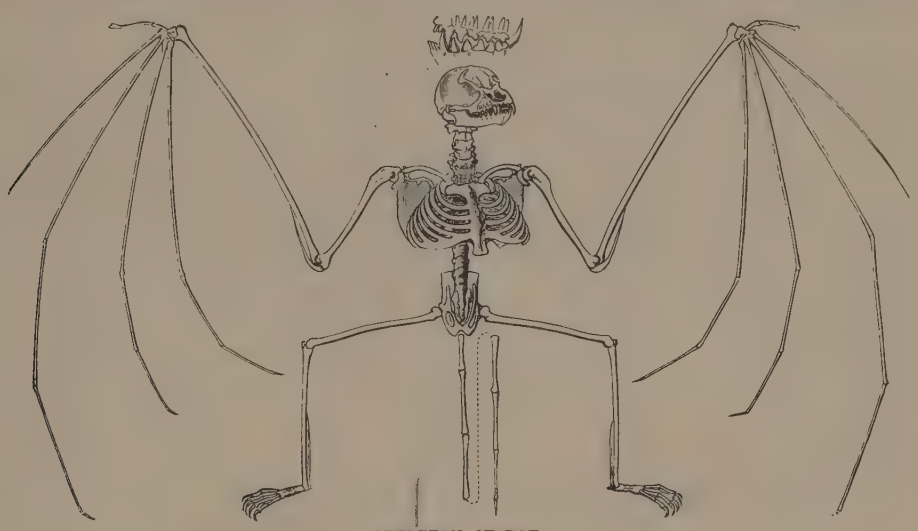
From the earliest times in which the science of zoology attracted the attention of observant men, the discovery of a true systematic arrangement has been one of the great objects of those who studied animal life, and the forms on which it is outwardly manifested. Among the more conspicuous of those enigmatical beings are the strange and wierd-like animals which are popularly known by the terse title of Bats, and, scientifically, by the more recondite name of Cheiroptera.

A most remarkable example of the occurrence of bats in large numbers is recorded in the seventh volume of the Smithsonian Institution, in the form of a letter from M. Figaniere, Portuguese Minister, resident in or near Washington. He had purchased a piece of property at Seneca Point, in Maryland. The house had remained unoccupied some time, and had become the abode of bats. A detailed account is given of how much trouble the creatures gave the owner before they would yield up their domiciles. Upon actual count of those killed

in the main building, besides several thousand in out-buildings, there were nine thousand six hundred and forty killed.

Audubon relates an amusing incident which occurred to a guest of his, whom he does not mention by name, but who is known to have been the late M. Rafinesque, an eminent naturalist who made his home in our country. "The latter had been assigned a room, and when it was waxed late, and we had all retired to rest, every person I imagined was in profound slumber, save myself, when of a sudden I heard a great uproar in the naturalist's room. I got up and reached the door, when, to my astonishment, I saw my guest running about the room naked, holding the handle of my favorite violin, the body of which he had battered to pieces against the walls trying to kill the Bats which had entered by the open window; probably attracted by the insects around his burning candle. I stood amazed, but he continued running around the room until he was fairly exhausted, when he begged me to capture one of the animals, as he felt sure they were a new species."

The first peculiarity in the Bat form which strikes the eye, is the wide and delicate membrane which stretches round the body, and which is used in the place of the wings with which



SKELETON OF BAT.

birds are furnished. This membrane, thin and semi-transparent as it is, is double in structure, being a prolongation of the skin of the flanks and other portions of the animal, and, therefore, having its upper and under surface, in the same manner as the body of the creature itself. The two surfaces are so clearly marked that, with ordinary care, they can be separated from each other. Along the sides, this double membrane is rather stronger and thicker, but, as it extends from the body, it assumes greater tenuity, until at the margin it is so exquisitely thin, that the tiny blood-corpuscules, which roll along the minute vessels that supply the wing with nourishment, can be seen clearly through its integument, by the help of a good microscope.

In order to support this beautiful membrane, to extend it to its requisite width, and to strike the air with it for the purposes of flight, the bones of the fore-part of the body, and especially those of the arms and hands, undergo a singular modification.

The two bones of the fore-arm are extremely long, and the bone which is scientifically known by the name of the "ulna," is extremely small, and in many species almost wholly wanting. The reason for this arrangement is, that the great object of these two bones is, by the mode in which they are jointed to each other, to permit the arm to rotate with that movement which is easily shown by the simple process of turning the hand with its palm upwards. This latitude of motion would not only be useless to the Bats, but absolutely injurious, as the wing-membranes would not be able to beat the air with the steady strokes which are needful for maintaining flight. Therefore the arm is rendered incapable of rotation.

Passing onwards from the arms to the hands, the finger-bones are strangely disproportioned to the remainder of the body, the middle finger being considerably longer than the head and body together. The thumb is very much shorter than any of the fingers, and furnished with a sharp and curved claw. By means of this claw, the Bat is enabled to proceed along a level surface, and to attach itself to any object that may be convenient. In some of the Bats the thumb is much longer than that which is here figured.

The bones of the breast and the neighboring parts are also formed in a peculiar manner, being intended to support the broad surface of the wing-membrane, and to enable it to beat the air with sufficient force. The collar-bones are long, considerably arched, and strongly

VAMPIRE BAT.—*Phyllostoma spectrum.*

jointed to the breast-bone and the shoulder-blades. In the insect-eating Bats, these bones are more developed than in the fruit-eaters; probably because the former need a better apparatus for the capture of their quick-winged prey than the latter for seeking their vegetable food. Some species of Bat present a collar-bone which is half the length of the elongated upper arm.

The VAMPIRE BAT is a native of Southern America, and is spread over a large extent of country. It is not a very large animal, the length of its body and tail being only six inches, or perhaps seven in large specimens, and the spread of wing two feet, or rather more. The color of the Vampire's fur is a mouse tint, with a shade of brown.

Many tales have been told of the Vampire Bat, and its fearful attacks upon sleeping men,—tales which, although founded on fact, were so sadly exaggerated as to cause a reaction in the opposite direction. It was reported to come silently by night, and to search for the exposed toes of a sound sleeper,—its instinct telling it whether the intended victim were thoroughly buried in sleep. Poising itself above the feet of its prey, and fanning them with its extended wings, it produced a cool atmosphere, which, in those hot climates, aided in soothing the slumberer into a still deeper repose. The Bat then applied its needle-pointed

teeth to the upturned foot, and inserted them into the tip of a toe with such adroit dexterity, that no pain was caused by the tiny wound. The lips were then brought into action, and the blood was sucked until the bat was satiated. It then disgorged the food which it had just taken, and began afresh, continuing its alternate feeding and disgorging, until the victim perished from sheer loss of blood.

For a time, this statement gained dominion, but, after a while, was less and less believed, until at last, naturalists repudiated the whole story as a "traveller's tale." However, as usual, the truth seems to have lain between the two extremes; for it is satisfactorily ascertained, by more recent travellers, that the Vampires really do bite both men and cattle during the night, but that the wound is never known to be fatal, and, in most instances, causes but little inconvenience to the sufferer.

When they direct their attacks against mankind, the Vampires almost invariably select the foot as their point of operation, and their blood-loving propensities are the dread of both natives and Europeans. With singular audacity, the bats even creep into human habitations, and seek out the exposed feet of any sleeping inhabitant who has incautiously neglected to draw a coverlet over his limbs.

When they attack quadrupeds, they generally fix themselves on the shoulders and flanks of the animal, and inflict wounds sufficiently severe to cause damage unless properly attended to. It is quite a common occurrence that when the cattle are brought from the pastures wherein they have passed the night, their shoulders and flanks are covered with blood from the bites of these blood-loving bats. It might be said that the bleeding wounds might be accounted for by some other cause, but the matter was set at rest by a fortunate capture of a Vampire "red-handed" in the very act of wounding a horse.

Darwin, who narrates the circumstance, states that he was travelling in the neighborhood of Coquimbo, in Chili, and had halted for the night. One of the horses became very restless, and the servant, who went to see what was the matter with the animal, fancied that he could see something strange on its withers. He put his hand quickly on the spot and secured a Vampire Bat. Next morning there was some inflammation and soreness on the spot where the bat had been captured, but the ill effects soon disappeared, and three days afterwards the horse was as well as ever.

It does not seem to be the severity of the wound which does the harm, but the irritation which is caused by pressure, whether of a saddle, in the case of a horse, or of clothing, in the case of a human being.

The Vampire seems to be very capricious in its tastes, for while one person may sleep in the open air with perfect impunity, another will be wounded almost nightly. Mr. Waterton, urged by his usual enthusiastic desire for personal investigation, slept for the space of eleven months in an open loft, where the Vampires came in and out every night. They were seen hovering over the hammock, and passing through the apertures that served for windows, but never made a single attack. Yet an Indian, who slept within a few yards, suffered frequently by the abstraction of blood from his toes. This distinction was not on account of color, for a young lad about twelve years of age, the son of an English gentleman, was bitten on the forehead with such severity, that the wound bled freely on the following morning. The fowls of the same house suffered so terribly, that they died fast; and an unfortunate jackass was being killed by inches. He looked, to use Mr. Waterton's own language, "like misery steeped in vinegar."

Although these bats have so great a predilection for the blood of animals, they are not restricted to so sanguinary a diet, but live chiefly on insects which they capture on the wing. Indeed, they would have but a meagre diet were they to depend wholly on a supply of human or brute blood, for there are sufficient Vampires in existence to drain the life-blood from man and beast. Many other creatures have the same propensities—happy if they can gratify them; satisfied if they are withheld from so doing. The common leech is a familiar example of a similar mode of life; for it may be that not one leech out of a thousand ever tastes blood at all, although they are so ravenously eager after it when they have the opportunity for gratifying their sanguinary taste.

On reference to the figure of the Vampire Bat, it will be seen that the wide and flattened membrane which supports the body in the air, connects together the whole of the limbs and the tail, leaving free only the hinder feet, and the thumbs of the fore-paws. This membrane is wondrously delicate, and is furnished not only with the minute blood-vessels, to which allusion has already been made, but with a system of nerves which possess the most exquisite power of sensation.

It has been long known that bats are able to thread their way among boughs of trees and other impediments with an ease that almost seems beyond the power of sight, especially when the dark hours of their flight are considered. Even utter darkness seems not to impede these curious animals in their aërial progress, and when shut up in a darkened place, in which strings had been stretched in various directions, the bats still pursued their course through the air, avoiding every obstacle with perfect precision. In order to ascertain beyond doubt whether this faculty were the result of a more than usually keen sight, or whether it were caused by some hitherto unknown structure, Spallanzani deprived a bat of its eyes, and discovered by this most cruel experiment, that the bat seemed as capable of directing its flight among the strings without its eyes as with them.

Whether this curious power were resident in any part of the animal's structure, or whether it were the result of a sixth and unknown sense, was long an enigma to naturalists. The difficulty, however, seems to have been solved by the investigations which have been made into the formation of the bat's wing, and it is now universally allowed, that to the exquisite nervous system of its wings the bat is indebted for the above-mentioned faculty.

The Vampires are said to unite in themselves the progressive power of quadrupeds and birds, and to run on the ground as swiftly as rats, while they fly through the air as easily as any bird. But this accomplishment of running is by no means general among the bats, whose mode of progress is awkward in the extreme, and when the animal is hurried or alarmed, positively ludicrous.

Bats are in general very much averse to the ground, and never, unless under compulsion, place themselves on a level surface. Their mode of walking is grotesque and awkward in the extreme; and the arduous task of proceeding along the ground is achieved with such difficulty, that it seems almost to be painful to the animal which is condemned for the time to exchange its easy aërial course for the tardy and uncongenial crawl to which its earthly progress is limited. Quadrupedal in its form, although that form may be strangely modified, the bat will occasionally assume quadrupedal action, and walk on the ground by the aid of all its four feet. The method of advancing is as follows:

The bat thrusts forward one of the fore-legs or "wings," and either hooks the claw at its extremity over any convenient projection, or buries it in the ground. By means of this hold, which it thus gains, the animal draws itself forward, raises its body partly off the earth, and advances the hind leg, making at the same time a kind of tumble forward. The process is then repeated on the opposite side, and thus the creature proceeds in a strange and unearthly fashion, tumbling and staggering along as if its brain were reeling from the effects of disease. It steers a very deviating course, falling first to one side and then to the other, as it employs the limbs of either side.

None of the bats like to raise themselves into the air from a perfectly level surface, and therefore use all their endeavours to climb up some elevated spot, from whence they may launch themselves into the air.

They climb with great ease and rapidity, being able to hitch their sharp and curved claws into the least roughness that may present itself, and can thus ascend a perpendicular wall with perfect ease and security. In so doing they crawl backwards, raising their bodies against the tree or wall which they desire to scale, and drawing themselves up by the alternate use of the hinder feet. When they have attained a moderate height they are able to fling themselves easily into the air, and to take to immediate flight. They have the power of rising at once from the ground, but always prefer to let themselves fall from some elevated spot.

The reason is now evident why the bats take their repose in the singular attitude which has been already mentioned. When suspended by their hind feet, they are in the most favor-

able position for taking to the air, and when they desire to fly need only to spread their wings, and loosing their foothold, to launch themselves into the air.

There may be, and probably are, other reasons for the curious reversed attitude, but that which has already been given accounts in some measure for it. Even among the birds examples are found of a similar mode of repose; members of the genus Colius, an African group of birds, sleep suspended like the bats, clinging with their feet, and hanging with their heads downwards. But these birds cannot assume this attitude for the purpose of taking to flight, as their wings are used as readily as those of most other feathered creatures, and therefore the reason which was given for the reversed position of the bats will not apply to the birds.

On the nose of the Vampire Bat may be observed a curious membrane of a leaf-like shape. This strange and not prepossessing appendage to the animal is found in some of the bats which

THE GREAT HORSESHOE BAT.—*Rhinólophus ferrum-equinum.*

inhabit Great Britain. Among the bats which possess the leaf-decorated nose, the GREAT HORSESHOE BAT is the most conspicuous. In its wings and body it differs but very little from other bats.

The membrane which gives to this creature the title of Horseshoe Bat, is extremely large in proportion to the size of the animal, though not so large as in some of the foreign bats. It is double in form, that portion which is in front resembling a horseshoe in shape, and curving from the lips upwards, so as to embrace the nostrils. The second leafy membrane is placed on the forehead, and is sharply pointed.

The ears of this bat are large, pointed, and marked with a succession of ridges, which extend from the margins nearly half-way across the ears. The "tragus," or inner ear, is wanting in this bat, but its office seems to be fulfilled by a large rounded lobe at the base of the ear.

The color of the fur is gray with a slight tinge of red above, while on the under portions of the animal the ruddy tint vanishes, and the hair is of a very pale gray. The membrane is of a dusky hue. The bat is not a very large one, the length of the head and body being only two inches and a half, while that of the extended wings is about thirteen inches. The ears are half an inch in breadth, when measured at their widest part, and are about three-quarters of an inch in length.

What may be the object of the wonderful nasal appendage seems to be quite unknown. The most obvious idea is, that it is given to the animals for the purpose of increasing the

delicacy of their sense of smell in seeking food and avoiding foes. But even if such be the case, there seems to be no apparent reason why such a privilege should be granted to one species and denied to another—both animals being in the habit of seeking their nutriment and escaping pursuit in a similar manner. The generic term, Rhinolophus, which is applied to these bats, is derived from two Greek words, the former signifying a nose, and the latter a crest.

Another peculiarity of form which has been noticed in these animals, is the presence of two prominences on the groin, which have been taken for supplementary mammæ, and described as such. As, however, no mammary glands exist beneath these projections, they are evidently no true mammæ, and probably belong only to the skin.

The Great Horseshoe Bat seems to be less endurent of light than many of its relatives, and takes up its abode in caverns so dark and gloomy that no other species of bat will bear it company. This instinct of concealment induces the bat to leave its home at a later and to return at an earlier hour than the other bats, and consequently it has only recently been

THE BARBASTELLE.—*Barbastellus communis.*

found to exist in England. The first specimen which was captured had fixed its abode in rather a precarious situation, and was found in a building belonging to the Dartmouth powder mills. Since that time it has been discovered in many places, but always in some dark and retired situation.

There is another similar animal found in England, called the Lesser Horseshoe Bat (*Rhinólophus hipposidéros*). This creature was for some time thought to be the young of the last mentioned animal, but is now known to be a distinct species. The name Hipposideros is Greek, and in that language signifies the same as Ferrum-equinum in Latin, *i.e.* Horseshoe.

The bats which we shall now examine are devoid of that strange nasal leafage which gives so unique an aspect to its wearer. The Barbastelle does not seem to be very plentiful in Europe, although specimens have several times been taken in various parts of it. It is a singular coincidence that the first acknowledged British specimen was captured in a powder mill, as was the case with the Great Horseshoe Bat.

One of these animals which was for some weeks in the possession of Mr. Bell, was taken in Kent, at the bottom of a mine seventy feet in depth. It did not seem to be so active as some Long-Eared and other bats which were taken in the same locality, and preferred lying on the hearth-rug to using its wings. It fed readily on meat and would drink water, but never became so tame as its companions. Its captive life lasted only a few weeks, its death being apparently hastened by the attacks of the other bats, one of which was detected in the very act of inflicting a bite on the Barbastelle's neck.

The color of the Barbastelle is extremely dark, so much so, indeed, that by depth of tint alone it can be distinguished from almost any other bat. On the hinder quarters, a rusty

brown takes the place of the brownish-black hue which characterizes the fore-part of the body. Underneath, the hair is nearly gray, being, however, much darker towards the neck.

The length of its head and body is just two inches, that of the ears half an inch, and the expanse of wing measures between ten and eleven inches. The ears are tolerably large, and slightly wrinkled. The tragus is sharply pointed at its tip, and widened at its base. A full view of the face shows a rather deep notch in the outer margin and near the base of the ear.

One of the most common, and at the same time the most elegant, of the Cheiroptera, is the well-known LONG-EARED BAT.

This pretty little creature may be found in all parts of England; and on account of its singularly beautiful ears and gentle temper has frequently been tamed and domesticated. I have possessed several specimens of this bat, and in every case have been rewarded for the trouble by the curious little traits of temper and disposition which have been exhibited.

LONG-EARED BAT.—*Plecotus auritus.*

The enormous ears, from which the animal derives its name, are most beautiful organs. Their texture is exquisitely delicate, and the bat has the power of throwing them into graceful folds at every movement, thereby giving to its countenance a vast amount of expression.

It sometimes happens that the Long-eared Bat has lived long in captivity, and even produced and nurtured its young under such conditions. For the following very interesting account of a maternal bat, I am indebted to the kindness of Mrs. S. C. Hall.

"While living in an old rambling country house in Ireland, without any companions of my own age,—an only solitary child left (after my 'lessons' were finished) to create my own amusements—I made friends, of course, with our own dogs and horses; and as all the servants loved 'little Miss,' and anxiously ministered to her desires, I became well acquainted with the habits and peculiarities of the wild creatures in our own grounds and neighborhood. We were within a mile of the sea, and there was a beautiful walk from the dear old house, on to the cliff that sheltered our bathing cove, which I have traversed, accompanied by our Newfoundland dog, the old retriever-spaniels, and a fine deerhound, at nearly all hours of the day and night.

"A lovely ivy-covered cottage near the orchard, which, before I was born, was occupied by an old gardener, was at last given over to my menagerie, as the only way of keeping the 'big house' free from 'Miss Mary's pets.' My 'help' was a strong-bodied girl, one of the 'weeders,' who had the rare merit of not being afraid of anything 'barring a bull;' and she always intimated if I made a pet of a bull, she would 'wash her hands clean out of the menageeree for ever—Amin!'

"As I never did, poor Sally remained my assistant until the death of my dear grand-

mother broke up the establishment; and I came to England in the first blush of girlhood, to be civilized and educated, and made 'like other young ladies.'

"But those years were precious years to me; I grew, and fostered in those wild hours, an acquaintance with, and a love of Nature, which has refreshed my life with greenest memories. My dear young mother knew every bud and blossom of the parterre and the field, and though she disliked my seal, and obliged my young badger to be sent away (I was not very sorry for him, he bit so furiously, and would not be friends with the dogs, which the seal was), yet she tolerated my owl, my kites, and even a most prosperous colony of mice of many colors, and a black rat who was really an affectionate companion. My hare I was permitted to keep at the house, for he would hold no friendship with rabbits.

"Song birds I never attempted to cage, but robins and pigeons followed me (according to Sally), 'like their born mother.'

"The gable end of an old stable was covered by one of the finest myrtles I ever saw: it was twenty-two feet high and seventeen wide, and standing out here and there from the wall. Swallows and bats loved to shelter in the holes of the old building. I was just a small bit afraid of the 'leather-winged bat;' my nurse often told me how they sucked cows, and even scratched out children's eyes.

"But one cold spring morning I saw a boy tossing into the air and catching again what I fancied to be a large mouse: of course, my sympathy awoke at once, and I rushed to the rescue; it proved to be a half-dead bat, very large and fat; its beautiful broad ears were still erect, and when I took it in my hands I felt its heart beat. I placed it in a basket, covered it with cotton, and put it inside the high nursery fender. I peeped frequently under the lid, and at last had the pleasure of seeing it hanging bat-fashion on the side of the basket, its keen bright eyes watching every movement. When it was fully restored, I endeavored to take it out, and then discovered that one of its hind feet had been crushed, and was hanging by a bit of skin. With trembling hands I removed the little foot, and applied some salve to the extremity.

"All this time the poor thing continued hooked on to the basket, and during the first day she would take no food, would not be tempted by meat or milk, by a fly or a spider. The next morning I saw her cowering in the cotton, and when I attempted to touch her she endeavored to bite my finger, and made the least possible noise you can imagine. I then offered her a fly, and in a moment it was swallowed; a bit of meat shared the same fate, and then she folded her wings round her, intimating, as I imagined, that she had had enough. All day she never moved, and at dusk, when I again tempted her with food, she took it. This continued for some days; she became tamer, and seemed to anticipate 'feeding-time.'

"At last, to my astonishment, I saw a baby-bat covered with light brownish fur, but still looking as young mice look, under the folds of her wing (I do not know what else to call it). Doubtless Nature had taught her that for the sake of this little one she must take food. I believe it sucked, for, afterwards, when she again suspended herself against the side of the basket, the young bat was not in the cotton, and I fancied that it hung from the mother while imbibing nutriment.

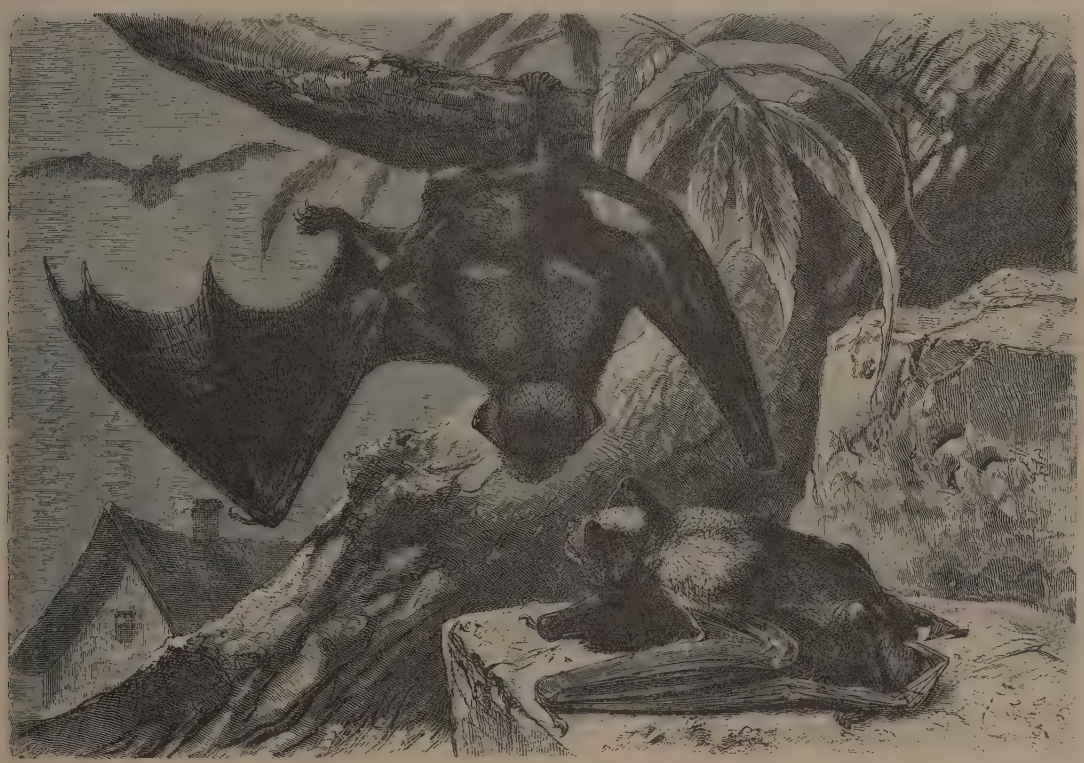
"The old bat became furious if I attempted to touch the young one; her soft hair stood up, and she would tremble all over, and utter little, short, sharp sounds. I wanted very much to see if the baby—like Chloe's puppies—was blind, but she would not allow an investigation. Certainly before a fortnight had passed, I saw its eyes, like little bright beads in the candle-light.

"My bat and her baby excited great curiosity, and she was too frequently disturbed; the young one lived for about a month, when, to my great grief, I found it dead in the cotton, the parent hanging, as usual, from the side of the basket. I am sorry to add, that the wee bat had what might have been a bruise, but which looked very much like a bite, at the back of the neck.

"The old bat became as tame as a mouse, would hang itself to any convenient portion of my dress, and devour whatever I gave it of animal food, and lick milk off my finger. It knew me well, would fly round my room in the evening, and go out at the window hawking for

insects, and return in a couple of hours and hang to the window-sill, or to the sash, until admitted. At night, it would sometimes fasten in my hair, but never went near my mother or the servants. It did not seem to experience any inconvenience from the loss of its foot, and continued a great favorite for more than two years. I suppose the heat of my room prevented its becoming torpid in winter, though certainly it never prowled about as it used to do in spring and summer; I do not think it ate in winter, but of this I cannot be certain. It disappeared altogether at last, falling a prey, I believe, to some white owls, who held time-honored possession of an old belfry. I was very sorry for my bat, and should be glad to cultivate the intellect and affections of another, if I had the opportunity."

It is curious, by the way, to mark the analogy that exists between the swallows and bats.



NOCTULE, OR GREAT BAT.—*Vesperugo noctula.*

Each of these groups loves the air, and is mostly seen on the wing. Their food consists of the flying insects, which they chase by their exquisite command of wing; and it will be noticed that, as soon as the swallows retire to rest at dusk, after clearing the air of the diurnal insects, the bats issue from their homes, and take up the work, performing the same task with the insects of night, as the birds with those of day. Then, as the dawn breaks, out come the swallows again, and so they fulfil their alternate duties.

The NOCTULE is not so pleasant a companion as the Long-eared Bat, for it gives forth a most unpleasant odor. Its cry is sharp and piercing, thereby producing another analogy with the swifts, which are popularly known by the name of "Jacky-screamers."

The voice of all bats is singularly acute, and can be tolerably imitated by the squeaking sound which is produced by scraping two keys against each other. There are many people whose ears are not sensible to the shrill cry of these animals—which, in some cases, is rather fortunate for them. I well remember being on a heath, one summer's evening, when the air was crowded with bats hawking after flies, and their myriad screams were so oppressive, that I longed for temporary deafness. Yet my companion—an accomplished musician—was per-

fectly insensible to the shrill cries, which seemed to pierce into the brain like so many needles. It is also known that many ears are deaf to the stridulous call of the grasshoppers.

One use of the tail is, evidently, that it should act as a rudder, in order to guide the flight while the creature is on the wing. There is, however, another purpose which it serves, and which would never have been discovered, had not the bat been watched. It seems that the female bat uses its tail, and the membrane which stretches on either side from the tail to the hind legs, as a cradle, in which to deposit its young when newly born and comparatively helpless.

Bats are generally found to assemble in great numbers wherever they find a convenient resting-place, and in such localities as church towers, rocky caverns, hollow trees, and the like, they may be found by the hundred together. These numerous assemblies are the cause of a large deposition of guano, which consists almost wholly of the refuse of insects, such as wings, legs, and the harder coverings. In this guano are found, by the aid of the microscope, very many curious infusorial objects, which may be separated from the guano by the usual modes of preparation.

The odor which arises from this substance is peculiarly sharp and pungent, and cannot easily be mistaken. The animals themselves are readily alarmed when disturbed in their home; they disengage themselves from their perches, and flap about in great dismay, knocking themselves against the intruder's face, much as the great nocturnal beetles are wont to do on summer's evenings. A visit to a bat-cave is, therefore, no pleasant affair.

The bats which have heretofore been mentioned feed on animal substances, insects appearing to afford the principal nutriment, and raw meat or fresh blood being their occasional luxuries. But the bats of which the Flying Fox is an example, are chiefly vegetable feeders, and, in their own land, are most mischievous among the fruit-trees.

They are the largest of the present bat tribe, some of them measuring nearly five feet in expanse of wing. Their popular name is FLYING FOXES, a term which has been applied to them on account of the red, fox-like color of the fur, and the very vulpine aspect of the head. Although so superior in size to the Vampires, the Flying Foxes are not to be dreaded as personal enemies, for, unless roughly handled, they are not given to biting animated beings.

But though their attacks are not made directly upon animal life, they are of considerable importance in an indirect point of view, for they are aimed against the fruits and other vegetable substances by which animal life is sustained. Figs and other soft fruits appear to be the principal food of these bats; and so pertinacious are the animals in their assaults on the crops, whether of field or tree, that they are held in no small dread by the agriculturist.

It is no easy matter to guard against such foes as these winged devourers, for as the air is an ever open path by which they can proceed on their destructive quest, and the darkness of night shields them from watchful eyes, the ordinary precautions which are taken against marauders would be useless.

There are but two alternatives for any one who desires to partake of the fruit which he has cherished—the one, to cover the whole tree with netting or similar fencing, and the other, to enclose each separate fruit-cluster with a sufficient protection. As the trees which the Kalongs, as these bats are often called, most affect, are of considerable size, the latter plan is that which is generally pursued. For this purpose, the natives weave from the split branches of the bamboo, certain basket-like armor, which is fastened round the fruit as it approaches maturity, and is an effectual guard even against the Kalong's teeth.

When the trees are small, they are sometimes covered entirely with netting, but not to such good purpose as when each fruit is separately protected. For these bats are so cunning, that they creep under the nets and render nugatory all the precautions which have been taken. One proprietor of a garden at Pernambuco was never able to secure a single fig from his trees, in spite of nets by night and guns by day. The bats are wise animals, and do not meddle with unripe fruit.

The flight of these creatures is unlike that of the more active insect-feeding Cheiroptera. The stroke of the wings is slow and steady, and instead of the devious course which charac-

terizes the carnivorous bats as they flit about the air in chase of their insect prey, these frugivorous species fly in straight lines and to great distances.

The Kalongs do not seem to care much for dark and retired places of abode; and pass the

THE EDIBLE KALONG.—*Pteropus edulis.*

day, which is their night, suspended from the trunks of large trees, preferring those which belong to the fig genus. On these boughs they hang in vast numbers, and by an inexperienced observer, might readily be taken for bunches of large fruits, so closely and quietly do they hang. If disturbed in their repose, they set up a chorus of sharp screams, and flutter about in a state of sad bewilderment, their night-loving eyes being dazzled by the hateful glare of the sun. They are apt to quarrel under such circumstances, and fight for their roosting, or rather their hanging places, much as birds do when retiring to rest for the night.

Bats do not seem to be very tempting additions to the *cuisine*, but man is an omnivorous animal, and eats everything, whether animal, vegetable, or mineral, the last-named diet being

exemplified by the "stone-butter" of the German miners, and the clay balls of the Indian savage. Some nations there are which feed on their own kind. Many there are which live habitually on the quadrumana that inhabit their country, and there are some who find a favorite article of diet in the Cheiroptera.

The species which is most generally eaten is the Edible Kalong (*Ptéropus Edúlis*), a bat which is found in great quantities in the island of Timor and other places. It is a very large animal, the expanse of wing rather exceeding five feet, and the length of head and body being about a foot. The eye is a fine brown. The flesh of these bats is said by those who have ventured upon so strange a diet, to be very delicate in flavor, tender in substance, and white in color.

It is probably to these animals that Bennett refers, in his "Whaling Voyage round the Globe."

"The only animals that came under our notice at Timor, were bats and foxes. The bats were of that large kind which sailors call Flying Foxes. When our woodcutters commenced their labors in the forest, the first blow of the axe caused a large flock of these creatures to mount in the air, and wing their way to a less precarious retreat. They flew in a body to the distance of more than two hundred yards, then returned as simultaneously to the vicinity of the spot which they had quitted, and ultimately settled in the depths of the jungle.

"Considering how little their vision is adapted for day duty, it was interesting to notice the systematic manner in which they directed their flight: one which arose some time after the others, taking immediately the right direction to follow and join the main body of fugitives."

In this latter passage is mentioned one distinguished peculiarity of these creatures, namely their habit of flying in long lines, somewhat after the manner of rooks returning to roost—

"The blackening train of crows to their repose."

One bat seems to take the lead, and the others follow at short and irregular intervals, pursuing the same course as their pioneer.

The bats which belong to this genus (Pteropus) are remarkable for the fact that they possess fewer vertebræ than any other known mammalian animal. In the entire spinal column there are but twenty-four of these bones; this paucity of number being caused by the entire absence of a tail.

HAIR OF INDIAN BAT.

The hair with which the bat tribe is furnished, is of a very peculiar character, and although closely resembling the fur of a rat or mouse when seen by the unaided eye, is so unique in aspect when seen under a microscope, that a bat's hair can be detected almost at a glance. Each hair is covered with very minute scales, which are arranged in various modes around a central shaft.

The accompanying figure exhibits the central portion of a hair taken from one of the Indian bats, magnified five hundred diameters, or two hundred and fifty thousand times superficially. Near the root, the hair is almost devoid of these scales, and therefore appears much smaller than in the central and terminal portions. Some of these external scales bear a close resemblance to the scales which are placed on the surface of a butterfly's wing; but can easily be distinguished from them by their smaller size, and the absence of the striated markings that are found on the scales of the butterfly's wing.

The strange similitude between the bat's hair, and the plant which is popularly known by the name of "Mare's-tail," cannot but strike any one who is in the least acquainted with botany. It may be, that so remarkable an outward resemblance would not exist unless there were some cause, at present hidden, which would account for it.

Before leaving the study of the bats, we must take a cursory view of the strange condition of life in which these animals pass the colder months of the year, which condition is known by the name of hibernation, because it takes place in the winter.

The insect tribes on which the bats chiefly feed and maintain their subsistence, are either quiescent during the winter months, or are abroad in such limited numbers that they could

not afford a subsistence to the bats or swallows. The latter creatures meet the difficulty by emigrating to more genial lands, and there finding the food which they would lose in these cold climes; but the former are obliged by the laws of their being to remain in the country where they were born. It is evident, therefore, that unless some provision were made for them during the insectless time of year, every bat would perish of hunger.

Such a provision exists, and exerts its power by throwing the bats into a deep lethargy, during which they require no food and take no exercise, but just live throughout the winter in a state of existence that seems to partake more of the vegetable than the animal life.

During hibernation, the respiration ceases almost wholly, and if it takes place at all, is so slight as to defy investigation. The air in which these creatures pass the winter seems to undergo no change by the breath, as would be the case if only one inspiration were made; and, strangest of all, the animal seems capable of existing for some time in gases that would be immediately fatal to it in the waking state, or even without any air at all. The temperature, too, sinks to that of the surrounding atmosphere, although, as a general fact, the animal heat of these creatures is rather high, as is the case with most flying beings, whether mammals or birds.

Many curious and valuable trials have been made upon bats while in a state of torpidity, the subjects of experiment being placed in such a manner that the least act of respiration made itself clearly visible, by the movements of a delicate index. The wing was extended in such a manner, that the circulation of the blood was perceptible through its semi-transparent membrane, and a thermometer was arranged so as to register the temperature.

Very great care is requisite in conducting these experiments, because the least excitement, or the slightest raising of the temperature, suffices to rouse the somnolent animal, and to alter the conditions which are absolutely necessary for true hibernation. A hasty footfall, or an accidental tap given to the table on which the creature rested, would cause it to make several respirations, and to recover sufficient vitality to raise the temperature, and to consume some portion of oxygen from the air. The same animal which passed ten hours in a state of perfect somnolence, without producing any perceptible effect on the oxygen contained in the atmospheric air, consumed in a single hour more than four cubic inches of oxygen, when aroused and lively.

The curious subject of hibernation will be again noticed in connection with the various animals such as the marmot, dormouse and others, which pass the cold months in a state of torpidity.

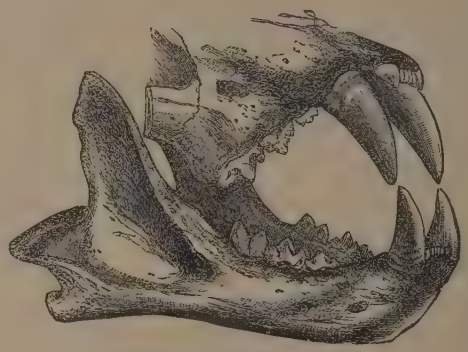
FELIDÆ;

OR, THE CAT TRIBE.

THE beautiful and terrible animals which are known by the general name of the Cat Tribe, now engage our attention.

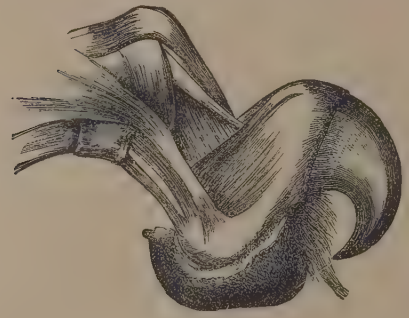
With the exception of one or two of the enigmatical creatures which are found in every group of beings, whether animal, vegetable, or mineral, the Cats, or FELIDÆ as they are more learnedly termed, are as distinct an order as the monkeys or the bats. Pre-eminently carnivorous in their diet, and destructive in their mode of obtaining food, their bodily form is most exquisitely adapted to carry out the instincts which are implanted in their nature.

All the members of the cat tribe are light, stealthy, and silent of foot, quick of ear and eye, and swift of attack. Most of them are possessed of the power of climbing trees or rocks, but some few species, such as the Lion, are devoid of this capability.



JAWS AND TEETH OF LION.

The teeth of the exclusively carnivorous animals are always of a form which permits them to seize and tear their prey, but does not give them the power of masticating their food after the manner of the vegetable feeders. We are all familiar with the mode in which the domestic cat consumes her food, whether it be a piece of butchers' meat which is given to her by the hand of man, or a mouse which she has captured by her own paws. Instead of the grinding process which is employed by monkeys and other creatures whose teeth are fitted for grinding their food, the cat tears the meat into conveniently sized morsels, and then eats the food by a series of pecking bites. The annexed engraving of a Lion's teeth and jaws will explain the reason for this mode of action.



CLAW OF LION.

In the accompanying figure the mechanism of the claw is exhibited.

When the animal is at rest, the upper tendons draw the claw backwards, so that it is lifted entirely from the ground, and the weight of the body rests only on the soft pads which stud the under surface of the foot. But when the creature becomes excited, and thrusts out its paw for the purpose of striking a blow, or clutching at its prey, the upper tendons become relaxed, while the lower tendons are tightened, and the claw is thrown boldly forward, sharp and ready for either use.

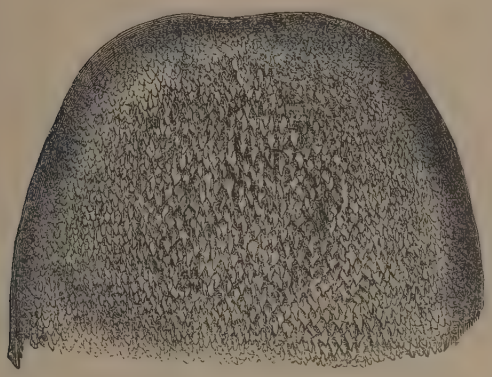
The claw which is represented is that of the Lion, but the mechanism is common to all the true cats.

Another curious structure is common to the group of feline animals; and as the Lion seems to be their most perfect representative, the example has been taken from that animal.

Every one who cares for cats, and who in consequence is cared for by those graceful

creatures, is familiar with the dry roughness of pussy's tongue, as she licks the hand of her human friend. This peculiarity of formation is the more conspicuous because it presents so great a contrast with the wet, smooth tongue of the dog; and, as a general rule, men are more accustomed to the lingual caresses of the dog than of the cat. The cause of the strangely dry tongue of the Felidæ is at once seen by reference to the tongue of a lion or tiger, or by applying a magnifying glass to the tongue of a domestic cat.

The entire surface of the tongue is covered with innumerable conical projections, which are so curved that their points lie towards the throat. On the central line of the tongue these projections are larger than at the side. Their chief, if not their only use, is to aid the cat in stripping the flesh from the bones of the animals which it has killed, and so to prevent the least avoidable waste of nutriment. Truly, in nature the economical system reigns supreme, and waste is an impossibility.



TONGUE OF LION.

So strongly made are these armatures, that the constant licking of a cat's tongue will remove the living tissues from a delicate skin, while the tongue of the Lion can rapidly cause the outflow of blood. There is a well-authenticated anecdote of a tame Lion cub and its owner, which exhibits strongly the rasping power of the feline tongue.

Of the magnificent and noble creatures called Lions, several species are reported to exist, although it is thought by many experienced judges that there is really but one species of Lion, which is modified into permanent varieties according to the country in which it lives.

The best known of these species or varieties is the South African Lion, of whom so many anecdotes have been narrated. This noble animal is found in nearly all parts of Southern Africa, where the foot of civilized man has not stayed its wanderings. Before the tread of the white man, the Lion shrinks unwillingly, haunting each advanced post for a time, but driven surely and slowly backward as the human intellect gains opportunity for manifesting its supremacy over the lower animals. So entirely does man sweep the wild beasts from his presence, that even in the Cape colony, a living Lion is just as great a rarity as in England, and there are very few of the colonists who have ever beheld a living Lion except when pent in a cage.

The color of the Lion is a tawny yellow, lighter on the under parts of the body, and darker above. The ears are blackish, and the tip of the tail is decorated with a tuft of black hair. This tuft serves to distinguish the Lion from any other member of the cat tribe. The male Lion, when full grown, is furnished with a thick and shaggy mane of very long hair, which falls from the neck, shoulders, and part of the throat and chin, varying in tint according to the age of the animal, and possibly according to the locality which it inhabits. The Lioness possesses no mane, and even in the male Lion it is not properly developed until the animal has completed his third year.

When fully grown, the male Lion measures some four feet in height at the shoulder, and about eleven feet in total length. These measurements are only applicable to the noble animals which have passed their lives in the free air of their native land, and have attained their majority with limbs unshackled and spirits unbroken.

The Lioness is a smaller animal than her mate, and the difference of size appears to be much greater than really is the case, because she is devoid of the thick mane which gives such grandeur and dignity to her spouse. Although smaller in size, she is quite as terrible in combat; and, indeed, the Lioness is oft-times a foe much more to be dreaded than the Lion. When she has a little family to look after, Leæna is a truly fearful enemy to those who cross her path, assuming at once the offensive, and charging the intruders with a fierce courage that knows no fear and heeds no repulse.

Of the character of the Lion, opinions the most opposite have been promulgated.

Until later days the Lion was considered to be the very type of fiery courage and kingly generosity, indomitable in conflict with the strong, but merciful in sparing the weak and defenceless. Latterly, however, writers have passed to the opposite extreme, speaking of the Lion as a cowardly sneaking animal, and have even gone so far as to declare him to be no more formidable than a mastiff. It must be remarked that these opposite ideas have been put forth by men of practical experience, who have been personally acquainted with the king of beasts in his own domains.

Making due allowance for the "personal error," as astronomers would term the difference

SOUTH AFRICAN LION.—*Leo capensis.*

of idiosyncrasy in the narrators, we may safely conjecture that the truth lies somewhere between the two extremes, and that the Lion is not always so fierce an animal as is said to be the case by some, nor always so cowardly as it is said to be by others.

Even the same individual may be at one time ferocious and truculent, attacking a party of armed men, in spite of their fire-rampart, and carrying off one of their number from among them; or at another time it may be timid and cowardly, skulking out of sight if discovered, and flying in terror before the shouts and cries of a few savages.

Hunger seems to be the great cause of a Lion's defiance of danger; and it but seldom happens that a Lion which has had plenty to eat troubles itself to attack man or beast.

There seems to be a considerable spice of indolence in the Lion, which indeed is the case in most of the members of the cat tribe. It is capable of very great muscular efforts, and for a time will exert the most wary vigilance. But as soon as the existing cause is removed, the creature seems overcome with lethargy, and, seeking the cover of its lair, yields itself to repose.

Even when aroused by the calls of hunger, the Lion will not take more trouble than is

necessary for the attainment of its end, and if it can strike down an antelope or jaguar with a blow of its paw, will be quite satisfied with its success, and will not trouble itself about such difficult game as a buffalo or a giraffe.

It is supposed by those who have had much experience of the leonine character, that the terrible "man-eating" Lions owe their propensity for human flesh to the indolence of their character or the infirmity of their frame, and not to their superior activity or courage. Unwilling, or unable, to expend strength and patience in the pursuit of the swift-footed antelope or powerful buffalo, the Lion prowls about the villages, thinking to find an easy prey in the man, woman, or child that may happen to stray from the protecting guardianship of the kraal and its dogs. Unarmed, man is weaker of limb, slower of foot, and less vigilant of senses than any of the wild animals, and therefore is a victim that can be slain without much trouble.

It is said that the taste for human flesh is often engendered by the thoughtless conduct of the very people who suffer from the "man-eaters." The Kaffirs are apt to leave their slain exposed in the bush, "a prey to dogs and all kinds of birds."

As a general rule, the Lion is no open foe. He does not come boldly out on the plain and give chase to his prey, for he is by no means swift of foot, and, as has already been mentioned, has no idea of running into danger without adequate cause. He can make tremendous leaps, and with a single blow from his terrible paw can crush any of the smaller animals. So he creeps towards his intended prey, availing himself of every bush and tree as a cover, always taking care to advance against the wind, so that the pungent feline odor should give no alarm, and when he has arrived within the limits of his spring, leaps on the devoted animal and strikes it to the ground.

This mode of action gives a clue to the object of the fear-instilling roar which has made the Lion so famous.

As the Lion obtains his prey by stealth, and depends for nutrition on the success of his hunting, it seems strange that his voice should be of such a nature as to inspire with terror the heart of every animal which hears its reverberating thunders. Yet it will be seen, that the creature could find no aid so useful as that of his voice.

If the Lion has been prowling about during the evening hours, and has found no prey, he places his mouth close to the earth, and utters a terrific roar, which rolls along the ground on all sides, and frightens every animal which may chance to be crouching near. Not knowing from what direction the fearful sound has come, they leave their lairs, and rush frantically about, distracted with terror and bewildered with the sudden arousing from sleep. In their heedless career, one or two will probably pass within a convenient distance of the lurking foe.

These nocturnal alarms cause great trouble to those who travel into the interior of Africa. When night draws on, it is the custom to call a halt, and to release the draught oxen from their harness. A kind of camp is then made, a blazing fire is kept alight as a defence against the wild beasts, and the oxen are fastened either to the wagons or to the bushes by which the encampment is made.

The Lion comes and surveys the mingled mass of oxen, men, and wagons, but fears to approach too closely, for he dreads the blaze of a fire. In vain does he prowl around the encampment, for he can discover no stragglers from the protecting flame, and, moreover, finds that the watchful dogs are on the alert. So he retires to some little distance, and putting his mouth to the ground, pours forth his deepest roar. Struck with frantic terror, the stupid oxen break away from their halters, and quitting their sole protection, gallop madly away only to fall victims to the jaws and talons of the author of the panic.

It often happens that several Lions combine in their attacks, and bring their united forces to bear upon the common prey, each taking his appointed part in the matter. One of these joint attacks was witnessed by two English officers engaged in the late Kaffir war, with one of whom I am well acquainted.

A small herd of zebras were quietly feeding in a plain, all unconscious of the stealthy approach of several Lions, which were creeping towards them in regular order, under cover of a dense reed thicket. So quietly did the Lions make their advance, that their progress was

unnoticed even by the zebra-sentinel. The Lions crept on, until they reached the sheltering thicket, when the sentinel took the alarm. It was too late—with a single bound, the leading Lion sprang over the reeds, felled one of the zebras, and set the others scampering in all directions so as to fall an easy prey to his companions.

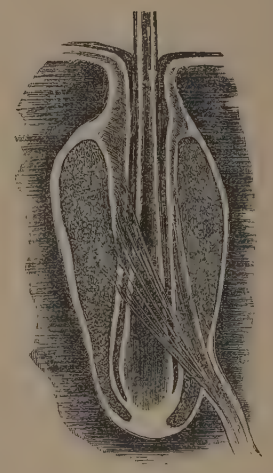
It has happened that such alliances have come to a tragical end for the assailant as well as the victim.

"Early one morning," says Mr. Anderson, in his "Lake Ngami," "one of our herdsmen came running up to us in a great fright, and announced that a Lion was devouring a Lioness. We thought at first that the man must be mistaken, but his story was perfectly true, and only her skull, the larger bones, and the skin were left. On examining the ground more closely, the fresh remains of a young springbok were also discovered. We therefore conjectured that the Lion and Lioness, being very hungry, and the antelope not proving a sufficient meal for both, had quarrelled; and he, after killing his wife, had coolly eaten her also."

The same writer relates a curious instance of a wounded Lion being torn in pieces by a troop of his fellows.

In the attack of large animals, the Lion seldom attempts an unaided assault, but joins in the pursuit with several companions. Thus it seems to be that the stately giraffe is slain by the Lion, five of which have been seen engaged in the chase of one giraffe, two actually pulling down their prey, while the other three were waiting close at hand. The Lions were driven off, and the neck of the giraffe was found to be bitten through by the cruel teeth of the assailants.

When the Lion kills an eland, and does not happen to be very ravenously hungry, he feeds daintily on the heart and other viscera, not often touching the remainder of the flesh. In so doing, he rips open the abdomen with his powerful claws, and tearing out his favorite morsels, devours them. Sometimes, after satisfying his hunger, he will leave the eland lying on the ground apparently uninjured, the only visible wound being that which he has made by tearing the animal open.



ROOT AND NERVES OF LION'S WHISKER HAIR.

Owing to the uniform tawny color of the Lion's coat, he is hardly distinguishable from surrounding objects even in broad daylight, and by night he walks secure. Even the practised eyes of an accomplished hunter have been unable to detect the bodies of Lions which were lapping water at some twenty yards' distance, betraying their vicinity by the sound, but so blended in form with the landscape, that they afforded no mark for the rifle even at that short distance.

Under such circumstances, their glowing eyes afford the only means by which they can be discovered, and even with such assistance the position of the body cannot be made out. The felidæ tread so silently that no footfall gives notice of their whereabouts; and aided by the beautiful mechanism of the "whiskers," they appear to be enabled to thread their stealthy way, almost without the aid of eyes.

Each whisker hair is, in fact, an organ endued with an exquisite sense of touch, and in connection with a set of large nerves that convey to the brain the least touch. In the engraving is given a magnified representation of a single hair-bulb of one of the whiskers, together with the nerves by means of which the hair is converted into a tactile organ. It will be seen, on reference to the figure, that if the extremity of the hair is touched, a pressure will instantly be made on the nerves at its root. By means of these delicate feelers, the animals are able to guide themselves through the thickets, and to escape the risk of alarming their intended prey by too rude a contact with the branches.

Among the more inland settlers of Southern Africa, adventures with the Lion are of common occurrence. As may by expected, many of these rencontres are of a deeply tragic nature, while others are imbued with a decidedly comic element. A great number of original anecdotes of this nature have been most kindly placed at my disposal by Captain Drayson, who

heard them from the lips of the actors themselves. In these narratives, the characters of both man and beast are well shown.

ANY person who has mixed much with either Dutch, Hottentot, or Kaffir sportsmen, is sure to have heard many exciting and curious adventures connected with the chase of the Lion. From amongst a somewhat large stock I will now select one or two anecdotes which will serve to illustrate either the habits and character of the animal, or the method of hunting him.

"A soldier, belonging to a line regiment, had heard that a great quantity of money might be obtained from amongst the Dutch Boers in the interior, by various simple processes with which he fancied himself acquainted.

"Selecting a favorable opportunity, he deserted, taking care to well fill his haversack with meat, to serve him during his march across the wild uninhabited district which separated the Dutch locations from our frontier.

"The soldier marched, during two days, some sixty miles or so, taking care when he slept to place the bag containing his meat under his head. On the third or fourth night, he lay down as usual to rest, with his head upon his pillow. It happened that in the country to which he belonged Lions were very common, and one of these unwelcome visitors happened to be prowling about in search of a supper, and dropped upon the military hero who was quietly snoring.

"Whether the Lion were aware of the fierce calling of the sleeper, and therefore paid him some respect, is not mentioned; but, instead of carrying off the man, he merely clawed up the bag, and trotted away growling with his trophy. The only damage that he had inflicted on the soldier was the abstraction of a few inches of his scalp.

"A Dutch Boer found the deserter wandering half starved on the plain, where he had been without food for a day and a night. The Boer fed and doctored him, but in return made him act as leader to the oxen and wagon, a position considered by the Dutch Boers to be the most degrading to man."

"NEAR the sources of the Mooi river there are several extensive plains on which large herds of elands and hartebeest were formerly found. Bordering on these plains are several ranges of hills, spurs from the Quathlomba mountains, and between these rocky spurs, kloofs or ravines exist, affording shelter for bush-buck, buffaloes, and many other animals which seek cover amongst either reeds or bushes.

"At the time when the following scene occurred, there was scarcely an inhabitant in this locality besides a few Welshmen, who resided amongst the stony hills, and lived by the chase, and two or three Dutch Boers, the remnants of those who had accompanied Maritz in his migration from the old colony.

"The Dutchmen had built themselves some wattle-and-daub huts, and were contented to remain where they were, as hunting and grazing-grounds were plentiful. A few thefts performed by their little neighbors, the Bushmen, had caused a commando to be raised, and, during the invasion of the hills that were then occupied by these little men, a boy had been captured by one of the Boers, and had been retained as a domestic. This individual will figure in the following scene with the Lion.

"One evening, whilst one of these Boers was sitting with his son, a lad of about sixteen years of age, in front of his hut, smoking his stone pipe, and looking with pride upon his sleek herds which grazed about him, he noticed some object that moved slowly along the side of an old watercourse at a considerable distance from him. A telescope was an article of value which few of these residents possessed; it was therefore by patient watching only that the father and son at length discovered that the object was a Lion, which appeared to be carefully stalking a valuable black stallion grazing near the old watercourse. Instantly seizing their guns, which were as usual loaded and at hand, the two ran down towards the Lion, shouting as they went to the Hottentots who were engaged about the farm.

"These individuals did not appear to be anxious about hurrying towards the scene of

danger, and, consequently, the Dutchman and his son reached the stallion before any other aid arrived.

"The course which they had followed caused them to lose sight of the Lion in consequence of intervening slopes of ground, so that, upon reaching the horse, which was grazing unconscious of danger, no Lion was to be seen. The young Boer, acting against the advice of his father, walked along the side of a ravine, in search of the grim monster. The old Boer repeatedly called to his incautious son to come back, and wait for the Hottentots and the dogs, which would soon come up; but, finding his advice disregarded, he left the horse, and walked towards his son, whom he found throwing stones into the long grass which fringed the edge of the ravine for the purpose of starting the Lion. When the Boer was about a hundred yards from the lad, he saw him stop, raise his gun, and fire suddenly, though apparently without aim, and then turn, running a few paces towards him. At the same instant, he saw the Lion make two prodigious bounds, and alight on his boy, whom he instantly dragged to the ground.

"All this occurred in a very few seconds; so that before the Boer, who ran to the rescue, arrived, the young Dutchman was mortally wounded. The Lion, crouching down among the long grass, retreated a few yards, then bounded over the rocks and reeds until out of sight, the shot which was fired by the old Boer being unheeded by him. When the father reached the fatal spot, he found his son senseless, and torn so fearfully as to preclude all possibility of recovery. He, however, had him conveyed home, but the lad never again spoke, and died during the night. Revenge was the first thought of the old Dutchman, who immediately sent round to his neighbors to warn them that a Lion was in their vicinity, and to beg their assistance on the following day in tracing the Lion to its den.

"The night was passed by the Boer as usual; for these men are very philosophic, and rarely allow any circumstance to interfere with their comfort. On the following morning, however, he was up very early, busily preparing for the great business of the day; bullets were being cast and powder-horn filled, etc., etc., when he was suddenly interrupted by the entrance of his little Bushman, who had, since his capture by the Boer some years before, reached his full growth, and might be estimated at any age between sixteen and sixty.

"'What do you here?' asked the Dutchman.

"The Bushman, who was armed with his tiny bow and arrows, answered by showing a small tuft of black hair like a shaving brush.

"This was an intelligible answer to the Boer, who, with eagerness, demanded the particulars; and the following is a translation of the Bushman's account.

"When the Lion struck down the young Dutchman, the Bushman was sitting upon a rock which commanded a view of the scene. The little creature then watched the Lion in its retreat, and marked it down amongst some long grass and bushes at the distance of a mile or so. He then procured an old and nearly useless ox from the cattle kraal, and arming himself with his bow and poisonous arrows, drove the beast close to the Lion's retreat, made it fast to a bush, and concealed himself in some long grass.

"The Bushman, from his nocturnal habits, can see by night nearly as well as by day; and so, when, shortly after dark, the Lion left his lair and walked on to the open plain outside, the Bushman was an attentive observer of his movements.

"The ox soon attracted the attention of the Lion, which approached with caution upon its victim; the Bushman at the same time holding his bow and arrows in readiness for an attack upon *his* victim. Soon the Lion sprang upon the ox, and, at the instant when he was engaged in the death struggle, the Bushman, with great rapidity, twice twanged his bow, and lodged two poisoned barbs in the Lion's flesh.

"The ox was soon overcome, and was dragged amongst the reeds, whilst the Bushman sought shelter in the crannies of the rocks near the scene of his operations.

"As soon as day began to dawn, the Bushman commenced his stealthy approach, through the grass and reeds, towards the Lion's lair, and was shortly sitting grinning on the carcass of the Lion, which, but a few hours before, was a terror to all the Hottentots on the farm, but now, overcome by the malignant poison with which the arrows had been prepared, was as harmless as one of the stones on which he lay.

"Being anxious to proclaim his triumph, the Bushman merely cut off the tuft of hair from the tail of the Lion and returned with this trophy to the Dutchman, who was not, however, quite satisfied with the business, for he would have preferred to shoot the Lion himself; moreover, he grudged the loss of the old ox, which he thought might have been spared to die the usual death of a draught ox, *i.e.* to work until it drops from fatigue, and to die where it falls. The Bushman, however, explained that, if he had wounded the Lion as it was walking along, it would have sprung upon him as soon as it felt the sharp arrow in its side; but, when it was busily employed in killing the ox, it would only think that the ox had pricked it with its horns, and would neither see nor think of its human enemy. Therefore it was safer and more certain to take the ox for a bait, and so, to save many a young and vigorous animal by the sacrifice of one old and worn-out beast."

"A Boer, a very humorous fellow, told me that he was returning to his wagons one evening, when he was far in the interior; at the time, he had with him only the single charge of powder with which his gun was loaded, as he had been out buck-shooting all day.

"Straight in his path he disturbed a Lion, which jumped up and turned to look at him. Very naturally, his first impulse was to fire, but remembering that he had but that one charge in his gun, he changed his tactics.

"The Dutchmen usually wear large broad-brimmed felt hats, around which several ostrich feathers are fastened. The Boer jumped from his horse, and pulled off his hat, which he held with his teeth by the brim, so that the upper part only of his face could be seen above the conglomeration of feathers. He then dropped upon his hands and knees, and commenced crawling towards the Lion. Such a strange animal had never before been seen by the astonished *Leeuw*, which turned and fled without a moment's hesitation.

"This method of alarming animals is not always successful; for whilst I was on the frontier, a Hottentot, who had been told of a somewhat similar plan to frighten a savage ox, met with a severe accident.

"The man had been instructed that to stoop down and look back at an animal from between the knees was a certain means of driving it away. So, being pursued by an infuriated ox, he stopped short, and doubled himself up for his peep; but unfortunately without the desired result. For the animal charged home, ripped up the Totty's leather crackers, wounded him, and sent him sprawling into a bush."

"An old Dutch Boer, who lived under the shadow of the Draakensberg mountains, gave me the following account of an interview with a Lion. The man was a well-known sportsman, and lived principally by means of the dollars which he realized upon ivory and skins. He was accustomed to make a trip each year into the game country, and traded with the Kaffirs or other inhabitants, under very favorable auspices. His stock-in-trade consisted of his guns and ammunition, several spans of fine oxen, some horses, and about a dozen dogs.

"A Lion, which appeared to have been roaming about the country, happened to pass near this Boer's location, and scenting the three coursers kept by the Boer, thought that the locality might suit him for a short period. A dense kloof, situated about a mile from the farm, afforded both shelter and water, and this spot the Lion selected as a favorable position for his head-quarters.

"The Boer had not to wait for more than a day, before the suspicions which had been excited in his mind by some broad footmarks which he saw imprinted in the soil, were confirmed into a certainty that a full-grown Lion had passed near his residence.

"It now became a question of policy, whether the Boer should attack the Lion, or wait for the Lion to attack him. He thought it quite possible, that *Leeuw*, having been warned off by the dogs, whose barking had been furious and continued during the night on which the Lion was supposed to have passed the farm, might think discretion to be the better part of valor, and consequently would move farther on, in search of a less carefully guarded locality upon which to quarter himself. He determined, therefore, to wait, but to use every precaution against a night surprise.

"The Lion, however, was more than a match for the Boer. For during the second night, Roeberg, the stout after-ox of the pet span, was quietly carried off, and although there was some commotion amongst the dogs and cattle, it was supposed that the alarm had scared the Lion, which had then decamped.

"The morning light, however, showed that the poacher had leapt the palisade which surrounded the kraal, and having killed the ox, had evidently endeavored to scramble over it again, with the ox in his possession. The joint weight of the Lion and ox had caused the stakes to give way, and an exit had then been easily effected.

"The spoor of the Lion was immediately followed by the Boer, who took with him a Hottentot and half-a-dozen of his best dogs. The traces were easily seen, and the hunters had no difficulty in deciding that the Lion was in the kloof. But this in itself was no great advance, for the kloof was about a mile in length, and three or four hundred yards in breadth; and the cover was composed of wait-a-bit thorns, creepers, and long grass, forming a jungle so thick and impenetrable, that for a man to enter appeared almost impossible.

"It was therefore agreed that the Boer should station himself on one side, whilst the Hottentot went to the other side of the kloof, and that the dogs should be sent into the cover. This arrangement, it was hoped, would enable either the Dutchman or Hottentot to obtain a shot; for each concluded that the dogs, which were very courageous animals, would drive the Lion out of the kloof, and that it would, upon breaking cover, afford one or the other a good chance.

"The excited barks of the dogs soon indicated that they had discovered the Lion, but they appeared to be unable to drive him from his stronghold: for although they would scamper away every now and again, as though the enraged monster were charging them, still they returned to bay at the same spot.

"Both of the hunters fired several shots, upon the hope that a stray bullet might find its way through the underwood to the heart of the savage. But a great quantity of ammunition was expended, and no result achieved.

"At length, as the dogs had almost ceased to bark, it was considered advisable to call them off. But all the whistling and shouting failed in recalling more than two out of the six, and one of these was fearfully maimed. The others, it was afterwards found, had been disposed of by the Lion in the most unceremonious manner; a blow from his paw had sufficed either to break the back or smash the skull of the nearest intruder.

"It thus happens that the bravest dogs are not always the best adapted for Lion or buffalo hunting. A cur is, perhaps, the most suitable; for while a courageous dog will boldly face a Lion, and even venture within reach of his deadly stroke, and thus soon be 'expended,' a cur will continue to annoy and occupy the attention of the fierce game, but at the same time will take good care of its own safety. It is not expected that a dog is to struggle with either a Lion or a buffalo; its duty is merely to distract the animal, and prevent it from devoting too much of its time to the hunter. Well-bred dogs are nearly useless when employed against dangerous game.

"This, the first attempt on the Lion, was a total failure, and the Boer returned home to lament the loss of his dogs, and to refresh himself after his exertions. During the night, he watched beside his kraal, but the Lion did not pay him a second visit.

"Early on the following evening, he, accompanied by his Hottentot, started afresh for the kloof, and having marked the spot from which the Lion had on the former occasion quitted the dense thorny jungle, the two hunters ascended a tree, and watched during the whole night for a glimpse at their purposed victim. But whilst they were paying the residence of the Lion a visit, *he* favored the farm with a call, and this time, by way of variety, carried away a very valuable horse, which he conveyed to the kloof, having been wise enough to walk out and return by a different path to that which he used on the former occasion. Consequently he had avoided the ambush which had been prepared for him.

"When the Boer returned to his farm, he became furious at his new loss, abused the Totties and Kaffirs for their neglect and cowardice, but soon became reasonable, and determined on a plan which, although dangerous, was still the one which appeared the most likely

to insure the destruction of this ravenous monster. This plan was to enter the dense kloof on foot, without dogs, and to endeavor by fair stalking to obtain his shot at the Lion.

"Now, when we consider the difficulty of moving through any cover without making a noise, and also the watchful habits of every member of the feline race, we may be certain that to surprise the Lion was a matter of extreme difficulty, and that the probability was that the Dutchman would meet with a disaster.

"At about ten o'clock on the morning after the horse slaughter, the Boer started for the kloof, armed with a double-barrelled smooth bore, and clothed in the most approved bush costume. He would not allow his faithful Hottentot to accompany him, because, as success mainly depended upon surprise, he considered that the highly flavored Totty might be scented by the Lion; whereas he alone would be more likely to escape detection. By this arrangement the Boer demonstrated the truth of the proverb with reference to the pot and the kettle, for the Dutchmen are not fonder of lavations than their Hottentot servants, and it is probable that, although a wide-awake Lion might have scented the Totty at 600 yards down wind, he would have discovered the Boer under similar conditions at 400 yards. We must, however, take the Boer's reason as a just one, and conclude that to leave his Totty at home was a wise precaution.

"On the first occasion, when the Lion was attacked by the Boer, it had been bayed by the dogs near some tall trees, far down in the kloof. If the animal had again selected the same location, the Boer would have had to creep through two or three hundred yards of thorny bush, and he would probably have alarmed the Lion long before he arrived within shot. He had thought over this, and had concluded that after dragging the carcass of the horse all the way from the farm, the Lion would not be disposed to drag it very far through the underwood in the kloof, and that, therefore, he should find the carcass of the horse at least at no great distance from the edge of the ravine, and probably the Lion close to it.

"Now it is the nature of the Lion, when gorged, to sleep during the day; and if the animal has carried off any prey, it usually conceals itself near the remains to watch them until it is ready for another feast.

"The Boer was aware of all this, and had laid his plans very judiciously. He approached the kloof slowly and silently, hit off the spoor of the Lion, and traced the spot where the horse had been allowed to remain on the ground for a short time.

"Although he moved onwards very slowly and with great caution, he was soon surrounded by the bush; and the brightness of the plain was succeeded by the gloom of the kloof. Being a most experienced hand at bushcraft, he was enabled to walk or crawl without causing either a dried stick to crack or a leaf to rustle, and he was aware that his progress had been accomplished without noise; for the small birds, usually so watchful and so much on the alert, flew away only when he approached close to them, thus showing that their eyes and not their ears had made them conscious of the presence of man.

"Birds and monkeys are the great obstacles in the bush to the success of a surprise, for the birds fly from tree to tree, and whistle or twitter, whilst the monkeys chatter and grimace, and express, by all sorts of harlequin movements, that some curious creature is approaching. When, therefore, the bushranger finds that birds and monkeys are unconscious of his presence until they see him, he may be satisfied that he has traversed the bush with tolerable silence, and has vanquished such formidable obstacles as sticks hidden by leaves, broken and dead branches, etc.

"There is a vast difference between hearing or reading how any dangerous work has been accomplished, and doing that work itself. But we can, by imagining ourselves in the position of the performer, realize in a measure the sort of sensations which he must have experienced, and we can then weigh the effect which the circumstance would have produced upon our own moderately strong nerves. It is highly probable that those who sigh for new sensations, might possibly find them were they to enter a dense bush on foot, and expect momentarily to meet, within speaking distance, a Lion of capacious maw, or a long-tusked, heavy-footed elephant, or even such a moderate opponent as a bull buffalo.

"The effect produced upon the system is much decreased when many individuals are

together. To obtain the most satisfactory results, therefore, a person should undertake the journey alone, and he will soon learn to consider those only as epicures who thus conjointly enjoy solitude and excitement.

"The Boer had penetrated scarcely fifty yards into the bush, when he had reason to suspect that he was close upon the lair of the Lion. He believed that such was a fact in consequence of the strong leonine scent, and from a part of the carcass of the horse being visible between the intervening branches. Instead, therefore, of advancing, as an incautious or inexperienced bushranger would have done, he crouched down behind a bush, and assumed a convenient attitude, so that he could remain still without inconvenience.

"All the animal creation are aware of the advantages of a surprise, and the feline tribe especially practise the ambuscading system. The Boer therefore determined, if possible, to turn the tables on the Lion, and to surprise, rather than to be surprised. He concluded that the Lion, even when gorged with horse-flesh, would not be so neglectful of his safety as to sleep with more than one eye at a time, and that, although he had walked with great care through the bush, he had probably caused the Lion to be watchful; if, therefore, he should go up to the carcass of the horse, he might be pounced upon at once.

"To sit down quietly within a few yards of a Lion, whose exact hiding-place was not known, required a certain amount of nerve; but the Boer knew what he was about, and had adopted the best and safest method to conquer his foe.

"After remaining silent and watchful for several minutes, the Boer at length saw that an indistinctly outlined object was moving behind some large, broad-leafed plants, and at about twenty paces from him. This object proved to be the Lion, which was half-crouched behind some shrubs, and was attentively watching the bushes near the Boer. The head only was clearly visible, the body being concealed by the foliage.

"It was evident that the Lion was aware that some person or thing had approached, but was not certain where this thing was now concealed. The Boer knew that this was a critical period for him, and therefore remained perfectly steady; he did not like to risk a shot at the forehead of the Lion, for it would require a very neat shot to insure a death wound, and the number of branches and twigs which were on the line of flight of the bullet would render a clear course almost impossible.

"The Lion, after a careful inspection, appeared to be satisfied, and laid down behind the shrubs. The Boer then cocked both barrels of his heavy roer, and turned the muzzle slowly round, so that he covered the spot on which the Lion lay, and shifted his position so as to be well situated for a shot.

"The slight noise which he made in moving attracted the attention of the Lion, who immediately rose to his feet. A broadside shot could not be obtained, so the Boer fired at a spot between the eyes; the bullet struck high, as is usually the case when the range is short and the charge of powder is heavy, but the Lion fell over on its back, rising, however, immediately, and uttering a fierce roar. As it regained its feet, it showed its side to the Boer, who sent his second bullet into its shoulder.

"The Lion bounded off through the bush, much to the satisfaction of the Boer, who felt more calm as each snap of a branch showed that the animal was farther from him.

"The Boer immediately started off home, and brought his Hottentots and dogs to assist in the search after the wounded animal, which the Boer concluded would be found dead, as the second wound, he thought, must be a mortal one.

"Before sunset that evening, the skin of the Lion was pegged down outside the Boer's house, and the Hottentots were drunk with delight at the success of 'the master.'"

Kolben, a traveller who visited the Cape about the year 1705, described the appearance and character of the African Lion. He gives a rule by which all travellers may know to a certainty the state of mind in which *Leeuw* may be. He, however, does not mention whether he actually tested the truth of his assertions, but merely states as follows:—

"The Lions here are remarkable for their strength. When they come upon their prey they knock it down, and never bite till they have given the mortal blow, which is generally

accompanied by a fearful roar. When the Lion is pinched with hunger, he shakes his mane and lashes his sides with his tail. When he is thus agitated it is almost certain death to come in his way, and as he generally lurks for his prey behind the bushes, travellers sometimes do not discover the motion of his tail till it is too late; but if a Lion shakes not his mane, nor lashes himself with his tail, a traveller may pass safely by him.

"If we could drive a bargain with the Felis Leo that he should always thus signal to travellers, we might pass through the African wilderness with less risk than at the present time. But from the experience gained by more modern hunters, it appears that the Lion will frequently attack horses, oxen, etc., without any intimation from mane or tail.

"The most formidable attacks are those which take place during a dark night, when it would be impossible to be prepared in consequence of not observing the shaking and lashing above referred to."

It has already been mentioned, that several naturalists accept the Lion of Western Africa as a species distinct from the Lion of Southern Africa, and have therefore given to the animal a different specific name, which is derived from the country in which it is found. Whatever may be said of the distinction between the Asiatic and African Lion, there seem to be scarcely sufficient grounds for considering the very slight differences which are found in Lions of Africa to be a sufficient warrant for constituting separate species. They may be permanent varieties, and even in that case are not nearly so different from each other as the mastiff from the spaniel.

From all accounts, however, it seems that the habits of all Lions are very similar, and that a Lion acts like a Lion, whether he resides in Africa or Asia.

We all are familiar with the self-gratulatory half-threatening mixture between a purr and a growl, which is emitted by the domestic cat when she has laid her paws on a mouse or a bird, and is divided in mind between the complacent consciousness of having won a prize by her own efforts, and the ever present fear that it should escape or be taken away. If we substitute a Lion for a cat, and suppose ourselves to be in the position of the victim, we may partly realize the feeling which must have filled the mind of a recent traveller and hunter in Southern Africa.

He had built for himself a "skärm," or slight rifle-pit, composed of stones, logs, and other convenient substances, and had watched during the night in hopes of finding game worthy the sacrifice of time and sleep. Nothing, however, had come within range of the concealed hunter excepting a white rhinoceros, which was shot, and fell dead on the spot. Wearied out with the prolonged vigil, the hunter dropped asleep, and lay for some time wrapped in unconsciousness.

But the active desert life requires that its votary should be ever prepared for any emergency, and even during sleep should be capable of instantaneous awaking ready for action. So it happened, that although the deep sleep of wearied nature had wrapped the hunter's senses in oblivion, a part of his being remained awake, ready to give the alarm to that portion which slept. Suddenly a sense of danger crept over the sleeper, and he awoke to a feeling that a monotonous rumbling sound, which reverberated in his ears, was in some way connected with imminent peril. A moment's reflection told him that none but a Lion could produce such sounds, and that one of those fearful animals was actually stooping over him, its breath playing on his face.

Taught by practical experience of the danger of alarming the Lion, the hunter quietly felt for his gun, which was lying ready loaded and cocked in front of him, and raised himself in order to get a glimpse at the foe. Slight as the movement was, it sufficed to alarm the Lion, which uttered a sharp, menacing growl, speaking in a language well known to the intended victim. Knowing that not a moment could be lost, he pointed his weapon towards an indistinct mass, which loomed darkly through the mists of night, and fired.

The report of the gun was instantly mingled with the fierce roarings of the infuriated Lion, maddened with the pain of its wound, seeking to wreak its vengeance on its foe, and tearing up the ground in its fury, within a very few paces of the skärm. By degrees the fierce roars subsided into angry growls, and the growls into heavy moans, until the terrible voice was hushed, and silence reigned during the remainder of the night.

When the dawn broke, the hunter ventured from his place of concealment, and searched for the carcass of the Lion, which he found lying within fifty yards of the spot from whence the fatal shot had been fired. Even in that short space of time the hyenas and jackals had been busy over the body of their departed monarch, and had so torn his skin that it was entirely spoiled for any purpose except that of a memorial of a most fearful night.

The hero of this adventure was C. J. Andersson, who has recorded his valuable African experiences in his visit to "Lake Ngami."

The same author relates a curious anecdote of a half-starved, and entirely bewildered Lion, which contrived to get into the church at Richterfeldt. The unfortunate brute was so weakened by fasting, that the Damaras dragged him out of the edifice by his tail and ears, and speared him without trouble.

In the leonine character is no small craft, which displays itself in various modes. Keen of scent in perceiving the approach of an enemy, the Lion appears to be well aware of the likelihood that his own approach might be manifested by the powerful odor that issues from his body. He therefore keeps well to leeward of the animal which he pursues, and employs the direction of the wind to conceal him from the olfactory senses of his game, and the position of the rocks, trees, or reeds, to hide his approach from their organs of vision.

A curious property connected with the Lion's tooth is worthy of notice. It has happened that, when a man has been bitten by a Lion, and escaped from its fangs, he has long felt the after effects of the injury, and this in a singular manner. Although the wound has healed kindly, and to all appearance has left no evil result except the honorable scar, yet that wound has broken out afresh on the anniversary of the time when it was inflicted. There is probably some poisonous influence upon the Lion's tooth by which this effect is produced, for it has been recorded that two men have been attacked by the same Lion, one of whom, who was bitten upon his bare limb, suffered from the annual affliction, while the other, whose limb was protected by his coat, felt no after inconvenience of a similar nature from the bite of the same animal.

A similar effect, lasting for several years, has been produced by the bite of a rabid dog, where the poisonous effects of the envenomed tooth were not sufficiently powerful to produce the fearful disease of hydrophobia. In an instance with which I am acquainted, the wound continued to re-open annually at least for the space of six years, and possibly for some years longer. The bite of a venomous snake has sometimes been known to produce the same phenomenon.

The Lion is by no means so fastidious a feeder as is popularly supposed. It is true that he does very much like to strike down a living prey, and lap the hot blood as it wells from the lacerated victim. But he is very well satisfied with any dead animal that he may chance to find, and indeed is in no way particular whether it be tainted or otherwise. So thoroughly is this the case, that Lion-hunters are in the habit of decoying their mighty game by means of dead antelopes or oxen, which they lay near some water-spring, knowing well that the Lions are sure to seize so excellent an opportunity of satisfying at the same time the kindred appetites of thirst and hunger.

In default of larger game, the Lion feels no hesitation in employing his mighty paw in the immolation of the small rodents, and frequently makes a meal on locusts, diversified with an occasional lizard or beetle. Led by implanted instinct, this animal will, when water is not to be found, quench its thirst by devouring the juicy water-melons that so marvellously store up the casual moistures of the desert, which would otherwise be exhaled in vapor before the fierce rays of the burning sun. Many other carnivorous animals, and one or two carnivorous birds, are known to possess the same instinctive knowledge. The scientific name of this water-melon is "Cucumis Caffer," and its native title "Kengwe," or "Kēme."

That a carnivorous animal should voluntarily take to vegetable food is a very curious fact, and seems to argue a high state of intellectual power. It is true that herbivorous animals, such as the rhinoceros and others, will resort to the same plant for the purpose of quenching their thirst; but then it must be remembered that these latter creatures are but following their

usual dietary system, while the Lion is acting in a manner directly opposed to his own flesh-loving nature.

The cautious habits which the Lion acquires when its domain has been invaded by man are most singular, and exhibit a considerable degree of reasoning power. The Lion which has never known man, knows no fear at the sight of man and his deadly weapons, attacking him with as much freedom as it would attack an antelope. But after it has had some experience of man and his wiles, it can only be induced by the calls of pressing hunger to venture upon an open attack, or to approach any object that looks as if it might be a trap.

Lions have been known to surround an escaped horse, and to prowl round it for two entire days, not daring to attack so apparently defenceless a prey, simply because its bridle was dangling from its neck, and made the creature suspicious, even though the rein had accidentally been hitched over a stump. On another occasion, a Lion crept close to a haltered ox, saw the halter, and did not like it, crept away again until he reached a little hillock about three hundred yards away, and there stood and roared all night.

The hunters take advantage of this extreme caution to preserve the game which they have killed from any marauding Lion that may happen to pass in that direction. A simple white streamer tied to a stick, and waving over the dead beast, is amply sufficient to prevent the Lions from approaching so uncanny an object. Sometimes, when no streamer can be manufactured, a kind of clapper is substituted, which shakes in the wind, and by the unaccustomed sound, very much alarms the Lion. It does truly seem absurd, that so terrible a beast as the Lion should be frightened by the fluttering of a white handkerchief, or the clattering of two sticks—devices which would be laughed to scorn by a tomtit of ordinary capacity.

Nearly all the feline animals seize their prey by the back of the neck, but the Lion seems to prefer the flank or shoulders as his point of attack. It seldom happens that the Lion springs upon the back of his prey, as is the case with many of the felidæ, for in the chase of a large animal, he chooses rather to pull down the doomed creature by main strength, his hinder feet resting on the earth, and his fore-paws and fangs tearing deeply into the neck and shoulders of his victim. There are, of course, exceptional instances, but the general rule seems to be that the Lion either strikes down his prey with a furious blow of his paw, or drags it to the ground by hanging on its neck with teeth and claws.

The young of the Lion are various in number, sometimes amounting to three or four at a birth, thus entirely contraverting the well-known fable of the Lioness and Fox. For some time, the young Lion cubs present a curious appearance, their fur being faintly brindled in a manner very similar to that of the tiger, or, to give a more familiar illustration, resembling the coat of a tabby cat, very indistinctly marked upon a light tawny ground. These faint brindlings are retained for some months, when they gradually fade into the deeper brown which tinges the tawny fur, and after awhile become wholly merged in the darker hue. I have observed a similar absorption of the brindled markings in a kitten. In its earliest youth, it was of a lightish brown, marked with tolerably defined stripes; but as it grew older, the dark streaks gradually became more faint, and, when the animal was about three months old, vanished entirely.

A cub-lion is just as playful an animal as a kitten, and is just as ready to romp with any one who may encourage its little wanton humors. Only it is hardly so safe a playfellow, for the very small Lion is as large as a very big cat, and sometimes becomes rather unpleasantly rough in its gamesomeness. It has no idea of the power of its stroke, and if it should deal a playful blow with its claws protruded, is apt to do damage which it never intended.

The weight of a Lion-cub is extraordinary in comparison with its size. I have personally tested the weight of several cubs, and was surprised at the massive build of the little creatures. Their bones are very large, and the muscular system very solid, so that a cub which about equals a large cat in actual measurement, far exceeds that animal in weight.

The development of the young Lion is very slow, three or four years elapsing before he can lay claim to the full honors of Lionhood, and shake his tawny mane in conscious strength.

At the tip of the Lion's tail is sometimes found a curious appendage, which was once thought to be a veritable claw, and to be used for the purpose of exciting the Lion to rage,

when he lashed his sides with his tail. It is now, however, proved to be nothing but a piece of thickened skin, which is only slightly attached by its base to the member on which it rests, and falls off at a very gentle touch. A similar protuberance has been discovered on the tail of an Asiatic leopard.

Before bidding farewell to the African Lion, it is but right to refer to the species or variety which inhabits the more northern portion of this huge continent. According to the account of Jules Gerard, the French lion-hunter, the Northern Lion is far more formidable an antagonist than his Southern relative. But to an unprejudiced reader, the spirited narratives which are given in the name of that author seem rather to bear reference to the singular cowardice of the native Algerian mind when brought in contact with the Lion, than the absolute ferocity of the animal, or the courage of the hunter.

To take but one instance.

That a large party of warriors, each armed with loaded musket, should stand in a row with their backs against a rock, trembling in deadly fear, whilst a Lion walked coolly along the line, with tail erect, in calm defiance of the firelocks that waved their faltering muzzles before his gaze like ears of corn before the gale, speaks but little for the courage of the warriors, and, in consequence, for that of their impudent foe.

It is true, also, that the North African Lion is a terribly fearful opponent on a dark night, when he is met face to face, with but a few yards between his body and the rifle-muzzle of the hunter; but so is the Lion of Southern Africa, in similar circumstances. All animals, like dogs, "bark best on their own threshold," and it behoves a man, who dares alone to make his nocturnal quest after the Lion, to bear a bold heart, a quick eye, and a ready hand. Yet these accomplishments are far more general than some writers would have us suppose, and there is many an unassuming hunter who sallies out at night and shoots a Lion or two without thinking that the beast was so inordinately ferocious, or himself so marvellously courageous.

There is really nothing in the character or history of the Lion of Algeria that could separate him from the Lion of Southern Africa.

Upon the African continent, the lion reigns supreme, sole monarch over the feline race. But in Asia his claims to undivided royalty are disputed by the Tiger, an animal which equals the lion in size, strength, and activity, and certainly excels him in the elegance of its form, the grace of its movements, and the beauty of its fur. The range of the Tiger is not so widely spread as that of the lion, for it is never found in any portions of the New World, nor in Africa, and, except in certain districts, is but rarely seen even in the countries where it takes up its residence. Some portions of country there are, which are absolutely infested by this fierce animal, whose very appearance is sufficient to throw the natives into a state of abject terror.

In its color the Tiger presents a most beautiful arrangement of markings and contrasts of tints. On a bright tawny yellow ground, sundry dark stripes are placed, arranged, as may be seen by the engraving, nearly at right angles with the body or limbs. Some of these stripes are double, but the greater number are single dark streaks. The under parts of the body, the chest, throat, and the long hair which tufts each side of the face, are almost white, and upon these parts the stripes become very obscure, fading gradually into the light tint of the fur. The tail is of a whiter hue than the upper portions of the body, and is decorated in like manner with dark rings.

So brilliantly adorned an animal would appear to be very conspicuous among even the trees and bushes, and to thrust itself boldly upon the view. But there is no animal that can hide itself more thoroughly than the Tiger, or which can walk through the underwood with less betrayal of its presence.

The vertical stripes of the body harmonize so well with the dry dusky jungle grass among which this creature loves to dwell, that the grass and fur are hardly distinguishable from each other except by a quick and experienced eye. A Tiger may thus lie concealed so cleverly, that even when crouching among low and scanty vegetation, it may be almost trodden on with-

BARBARY LION.

out being seen. The step, too, is so quiet and stealthy, that it gives no audible indication of the creature's whereabouts, and the Tiger has, besides, a curious habit of drawing in its breath and flattening its fur, so as to reduce its bulk as far as possible. When a Tiger thus slinks away from the hunters or from any dreaded danger, it looks a most contemptible and cowardly creature, hardly to be recognized in the fiery beast, which, when driven to bay, rushes, regardless of danger, with fierce yells of rage and bristling hair, upon the foremost foe.

When seeking its prey, it never appears to employ openly that active strength which would seem so sure to attain its end, but creeps stealthily towards the object, availing itself of every cover, until it can spring upon the destined victim. Like the lion, it has often been known to stalk an unconscious animal, crawling after it as it moves along, and following its steps in hopes of gaining a nearer approach. It has even been known to stalk human beings

TIGER.—*Tigris regalis.*

in this fashion, the Tiger in question being one of those terrible animals called "Man-eaters," on account of their destructive propensities. It is said that there is an outward change caused in the Tiger by the indulgence of this man-slaying habit, and that a "Man-eater" can be distinguished from any other Tiger by the darker tint of the skin, and a redness in the cornea of the eyes. Not even the Man-eating Tiger dares an open assault, but crawls insidiously towards his prey, preferring, as does the lion, the defenceless women and children as the object of attack, and leaving alone the men, who are seldom without arms.

The Tiger is very clever in selecting spots from whence it can watch the approach of its intended prey, itself being couched under the shade of foliage or behind the screen of some friendly rock. It is fond of lying in wait by the side of moderately frequented roads, more particularly choosing those spots where the shade is the deepest, and where water may be found at hand wherewith to quench the thirst that it always feels when consuming its prey.

From such a point of vantage it will leap with terrible effect, seldom making above a single spring, and, as a rule, always being felt before it is seen or heard.

It is a curious fact that the Tiger generally takes up his post on the side of the road which is opposite his lair, so that he has no need to turn and drag his prey across the road, but proceeds forward with his acquisition to his den. Should the Tiger miss his leap, he generally seems bewildered and ashamed of himself, and instead of returning to the spot, for a second attempt, sneaks off discomfited from the scene of his humiliation. The spots where there is most danger of meeting a Tiger, are the crossings of nullahs, or the deep ravines through which the water-courses run. In these localities the Tiger is sure to find his two essentials, cover and water. So apathetic are the natives, and so audacious are the Tigers, that at some of these crossings a man or a bullock may be carried off daily, and yet no steps will be taken to avert the danger, with the exception of a few amulets suspended about the person. Sometimes the Tigers seem to take a panic, and make a general emigration, leaving, without any apparent reason, the spots which they had long infested, and making a sudden appearance in some locality where they had but seldom before been seen.

In the districts where these terrible animals take up their abode, an unexpected meeting with a Tiger is by no means an uncommon event. While engaged in hog-spearing, the sportsmen have many times come suddenly upon a Tiger that was lying quite composedly in the heavy "rhur" grass from which the hog had started. In such cases, the terror of the native horses is excessive, for their dread of the Tiger is so great, that the very scent of a Tiger's presence, or the sight of a dried skin, is sufficient to set them plunging and kicking in their attempts to escape from the dreaded propinquity. One horse, which had been terrified by a Tiger, could not afterwards endure the sight of any brindled animal whatever, and was only restored to ordinary courage by the ingenious device of his master, who kept a brindled dog in the same stable with the horse until the poor beast became reconciled to the abhorred striped fur.

A very curious introduction to a Tiger occurred to a gentleman who was engaged in deer shooting.

He had crept up to a convenient spot, from whence he could command a clear view of the deer, which were lying asleep in the deep grass; had taken aim at a fine buck which was only at twelve yards' distance, and was just going to draw the trigger, when his attention was roused by a strange object which was waving above the grass, a few feet on the other side of the deer. It was the tail of a Tiger, which had approached the deer from the opposite direction, and had singled out the very animal which was threatened by the rifle. Not exactly knowing what kind of an object it was that stirred the grass, the sportsman re-adjusted his piece, and was again going to fire, when a Tiger sprang from the cover of the "moonje" grass, and leaped upon the very buck which had been marked out as his own. Under the circumstances, he did not choose to dispute the matter, but retreated as quietly as possible, leaving the Tiger in possession of the field.

The deer was an Axis, or Spotted Deer, animals which are very common in some parts of India, and are much appreciated by Tigers as well as men. Peacocks also abound in the same districts; in short, wherever spotted deer and peacocks may be found, Tigers are sure to be at no great distance from them. On one occasion, another sportsman had wounded a peacock, which fluttered about for a time, and then fell into a little open space in the bushes. As these birds, when winged, can run too fast to be overtaken by a man, the sportsman ran after the bird in order to catch it as it fell, and on entering the little area found himself in the presence of three Tigers, which had been evidently asleep, but were just roused by the report of the gun, and were looking about them in a dreamy and bewildered manner. The peacock lay dead close to the Tigers, who probably made a light repast on the game thus unexpectedly laid before them, for the sportsman took to his heels, and did not feel himself safe until he was fairly on board of his vessel.

The chief weapons of the Tiger are his enormous feet, with their sharp sickle-like talons, which cut like so many knives when the animal delivers a blow with his powerful limbs. Even were the talons retracted, the simple stroke of that sledge-hammer paw is sufficient to strike

to the ground as large an animal as an ox; while, if the claws lend their trenchant aid to the heavy blow of the limb, the terrible effects may be imagined.

Besides the severity of the wound which may be inflicted by so fearful a weapon, there are other means of destruction that lie hid in the Tiger's claws. From some cause or other,—it may be presumed on account of some peculiar manner in which the claws affect the nervous system,—even a trivial wound has often been known to produce lockjaw, and to destroy the victim by the effects of that fearful disease. It may be, that the perturbation of mind caused by the attack of the Tiger, may have some hand in the matter. Captain Williamson, an officer of twenty years' experience in Bengal, states that he never knew a person to die from the wounds inflicted by a Tiger's claws without suffering from lockjaw previous to death; and he adds, that those cases which appeared the least alarming were the most suddenly carried off.

Many modes are adopted of killing so fearful a pest as the Tiger, and some of these plans are very ingenious.

There is the usual spring-bow, which is placed in the animal's path, the bow drawn to the arrow's head, and a string leading from the trigger across the path in such a manner that the creature presses against it with its breast, discharges the weapon, and so receives the arrow in its heart.

The bow is set by fastening it to two strong posts set by the side of the Tiger's path, the string of the bow being parallel with the path. The string is then drawn back to its utmost limits, and a stick placed between the bow and the string, thus keeping the weapon bent. A long wedge is inserted between the stick and the bow, and the liberating cord tied to is projecting end. Lastly, the arrow is laid on the string, and the engine is ready for action. Of necessity, as soon as the Tiger presses the cord, the wedge is drawn away, the guarding stick drops, and the bow hurls its deadly missile. So rapidly does this simple contrivance act, that the Tiger is generally hit near the shoulder. The arrow is usually poisoned by means of a thread dipped in some deadly mixture, and wrapped round the arrow-point.

There is another plan, in which human aid is requisite, namely, by building a strong bamboo enclosure, in which the hunter lies, armed with a spear. At nightfall the Tiger comes prowling along and smelling the man, rears up on its hind legs, trying to claw down the bamboo bars. The hunter in the meanwhile takes his spear, and mortally wounds the brindled foe, by striking the spear-point between the bars of the edifice.

A still more ingenious mode of Tiger killing is that which is employed by the natives of Oude.

They gather a number of the broad leaves of the *prauss* tree, which much resembles the sycamore, and having well besmeared them with a kind of birdlime, they strew them in the animal's way, taking care to lay them with the prepared side uppermost. Let a Tiger but put his paw on one of these innocent looking leaves, and his fate is settled. Finding the leaf stick to his paw, he shakes it, in order to rid himself of the nuisance, and finding that plan unsuccessful, he endeavors to attain his object by rubbing it against his face, thereby smearing the ropy birdlime over his nose and eyes, and gluing the eyelids together. By this time he has probably trodden upon several more of the treacherous leaves, and is bewildered with the novel inconvenience; then he rolls on the ground, and rubs his head and face on the earth, in his efforts to get free. By so doing, he only adds fresh birdlime to his head, body, and limbs, agglutinates his sleek fur together in unsightly tufts, and finishes by hoodwinking himself so thoroughly with leaves and birdlime, that he lies floundering on the ground, tearing up the earth with his claws, uttering howls of rage and dismay, and exhausted by the impotent struggles in which he has been so long engaged. These cries are a signal to the authors of his misery, who run to the spot, armed with guns, bows, and spears, and find no difficulty in despatching their blind and wearied foe.

Another mode of destroying the Tiger is by means of a strongly constructed trap, made on the same principle as the ordinary mousetraps, which take their victim by dropping a door over the entrance. The Tiger trap is little more than the mousetrap, only made on a much larger scale, and of strong wooden bars instead of iron wires. The bait is generally a pariah dog, or a young goat, both of which animals give vent to their anxiety by loud wailings, and

so attract the prowling foe. In order to secure the living bait from being drawn out of the trap by the Tiger's claws, it is protected by an inner cage, to which the animal cannot gain access without dropping the door against his egress. This plan, however, is not very generally followed, as it possesses hardly sufficient elements of success.

A more productive plan—productive, because the reward for killing a Tiger, together with the sum for which the skin, claws, and teeth sell, is sufficient to keep a native for nearly a twelvemonth,—is, by digging a hole in the ground near a Tiger's haunt, putting a goat in the hole, and tethering it to a stake which is firmly driven into the centre of the little pit. A stone is then tied in one of the goat's ears, which cruel contrivance causes the poor animal to cry piteously, and so to call the attention of the Tiger. On hearing the goat cry, the Tiger comes stealthily to the spot, and tries to hook up the goat with his paw. Not succeeding, on account of the depth of the pit, he walks round and round, trying every now and then to secure the terrified goat, and thus exposing himself fairly to the hunters, who, quietly perched on a neighboring tree, and taking a deliberate aim with their heavy firelocks, lay him dead on the spot of his intended depredation.

A somewhat similar, but more venturesome mode of proceeding is that which is adopted by the Shikarries, as these native hunters are called.

When a Tiger has carried off a bullock, or some such valuable animal, the shikarrie proceeds to the spot, and after waiting sufficient time for the robber to gorge himself, and become drowsy, he sets off in search of the murdered bullock; a dangerous task, but one which is much lightened by the indications afforded by vultures, jackals, and other carrion-loving creatures, which never fail to assemble round a dead animal, of whatever race it may be.

Having found the half-eaten carcase, and ascertained that the Tiger is fast asleep, the hunter calls together as many assistants as possible, and with their aid, rapidly builds a bamboo scaffold, some twenty feet high, and four feet wide, which is planted close to the spot where the dead and mangled bullock lies. On the summit of the scaffold the shikarrie mounts; his gun and ammunition are handed up to him by his companions, his sharp "tulwar," or sword, is hung ready to his grasp, and after offering their best wishes for success, the assistants take their leave, each putting in a claim for some part of the spoils. The claws are the most coveted portion of the animal, for the natives construct from two of these weapons a charm, which, on the homœopathic principle, is supposed to render the wearer invulnerable to attacks from similar weapons.

After awhile the Tiger wakes from the drowsy lethargy which was caused by repletion, and after shaking himself, and uttering a few yawns, which draw the attention of the watchful hunter, proceeds to his temporary station, for the purpose of making another meal on the remains of the slaughtered animal.

The shikarrie takes advantage of the opportunity, and resting his gun on the platform, takes a deliberate aim, and lodges a bullet—often an iron one—in the body of the Tiger. Generally the aim is so true that the Tiger falls dead, but it sometimes happens that the wound, although a mortal one, is not instantaneously fatal, and the animal springs furiously upon the foe who dealt the blow. The Tiger is no climber, but rage will often supply temporary ability; and so fiercely does the animal launch itself against the scaffolding, that if made of a softer material, permitting the hold of the Tiger's claws, the creature might reach the hunter; or that if not firmly planted, the whole edifice would be brought to the ground. But the smooth, hard surface of the bamboo affords little hold for the sharp talons; and, even if the animal should succeed in approaching the platform where the hunter sits, a blow from the razor-edged tulwar strikes off a paw, and the Tiger falls helplessly to earth, only to meet its fate by a second bullet from the deadly firelock.

Attracted by the report of the hunter's gun, the neighbors flock to the spot, each man armed according to his ability; and if the beast is killed outright, join in a chorus of laudation towards the successful hunter, and of anger towards his victim, which may now be insulted with perfect impunity. Besides the ordinary trophies, which consist of the skin, claws, teeth, and the ordinary reminiscences of success, other portions of the Tiger are eagerly sought by the natives, the tongue and liver bearing the highest value. These organs are appropriated to

the medical art, and after being chopped into little dice-like cubes, are prepared after some Esculapian and mysterious fashion, and thenceforward hold rank as remedies of the first order.

Another, though less gallant, mode of killing Tigers is by setting certain enormous nets, supported on stakes, so as to form an inclosure, into which the animal is partly enticed and partly driven.

The height of the stakes to which the nets are suspended is about thirteen feet; so that, allowing for the droop at the upper portion of the toils, the nets are about eleven feet in height at their lowest point. It is, however, rather a stupid, and withal hazardous, mode of Tiger-hunting, and is not very often employed. It requires the aid of a very large body of men, and besides there is always a risk of inclosing some large animal, such as the buffalo or elephant, which rushes madly forward, and with the irresistible impetus of its huge body bears to the ground nets, stakes, and sentinels, leaving a wide path free for the remainder of the inclosed game to follow.

In order to induce the Tiger to leave its lair and to enter the toils, all possible means are used. Fires are lighted, burning torches are waved, guns are fired, drums are beaten, and, lastly, fireworks are largely employed. The most effective kind of firework is one which is made on the rocket principle, the tube which holds the fiery composition being of iron, and the "tail," or shaft, of bamboo. The rocket is held in the hand like a spear, and the fuse lighted. When it begins to fling out its burning contents, and to pull against the hand of the thrower, it is launched by hand, as if it were a spear, in the direction of the concealed quarry. An extremely powerful impulse is given by the burning composition, and the missile rushes furiously onward, scattering on every side its burden of fiery sparkles, hissing and roaring with a terrible sound, and striking right and left with its long wooden tail.

No Tiger can endure this fiery dragon which comes on with such fury, and accordingly the terrified animal dashes out of cover, and makes for the nearest place of concealment. But so artfully managed is the whole business that his only path of escape takes him among the nets, and, once there, his doom is certain. He cannot leap over the toils, because they are too high, nor break them down, because they are so arranged that they would only fall on him, and inclose him in their treacherous folds. Should he endeavor to climb over the rope fence, he exposes himself as a target for bullets and arrows innumerable; and, if he yields the point, and tries to conceal himself as best he may, he only delays his fate for a time, falling a victim to the watchful enemies who start him from his last fortress, and, from the safe eminence of an elephant's back, or the branches of a tree, pour their leaden hail on the devoted victim.

This mode of hunting, as well as the more legitimate custom of following the Tiger into the jungle, while mounted on elephants, requires the aid of many men, elephants, and horses, and cannot be undertaken every day. There is, however, another method of killing this terrible beast, which, when employed by hunters who understand each other's plans, and can place the fullest reliance on their mutual courage and tact, is more destructive to the fierce quarry than even the netting system, with its mob of beasts and men.

Two, or at the most three, hunters set out on their campaign, accompanied by their chosen "beaters" and other servants, and start with the determination of bearding the Tiger in his den, unaided by horse or elephant. It is a bold plan, yet, like many bold plans, succeeds through its very audacity.

The object of the beaters is by no means to give assistance when a Tiger is started, because they always run away as soon as the brute shows itself; but to make so astounding a noise that the Tiger cannot remain in the vicinity. When they reach a likely, or as it is termed, a "Tigerish" spot, they shout, they yell, they fire pistols, they rattle stones in metal pans, they beat drums, they ring bells, they blow horns, and, by their united endeavors, produce such horrible discord, that not even a Tiger dare face such a mass of men and noise. This precaution is absolutely necessary, for the Tiger loves to hide itself in as close a covert as it can find, and, unless driven from its place of refuge by such frightful sounds as have been mentioned, would lie closely crouched upon the ground, and either permit the hunters to pass by, or leap on them with a sudden spring, and so obtain a preliminary revenge of its own death.

A few bold and active beaters are sent forward as scouts, whose business is to climb trees,

and, from that elevated position, to keep watch over the country, and detect the Tiger if it attempt to steal quietly away.

Not only is the Tiger skin considered as an article possessing a commercial value, but the fat commands an equally high price among the natives, who employ it as an infallible specific against rheumatic affections. It is prepared for use in rather a curious, and withal, a simple manner.

Were the fat to be exposed to the action of the atmosphere, it would soon become rancid, and then putrid; but by subjection to the native mode of treatment, it clarifies itself with no trouble to the preparer. As soon as removed from the animal, the fat is cut into long strips of a convenient size to enter the necks of sundry bottles, which are cleansed for the purpose. By the aid of a stick, as many as possible of these strips are pushed into the bottle, which is then corked, and set in the sunshine for a whole day. The heat of the sun's rays soon melts the fat, and liquefies it as if it were oil. In this state it is permitted to remain until the evening, when it cools down into a firm white mass, resembling lard. This prepared fat is as useful to Europeans as to natives, not so much to rub on their rheumatic joints, as to lubricate their guns and locks, on which may depend the life of the owner.

Those who have hunted the Tiger in a genuinely sportsmanlike manner, matching fairly man against beast, are unanimous in asserting it to be a very cunning animal, putting all the powers of the human intellect to the proof. As is the case with the fox,—our most familiar instance of astuteness among brutes,—each Tiger seems to have its peculiar individuality so strongly marked, that it must be separately matched by the hunter's skill.

In India, many tales are told of the Tiger and its ferocious daring. It has often been known to leap on the roof of a native hut, tear up the slight covering with its claws, and leap into the room below. However, when a Tiger acts in this manner, the tables are generally turned, for the noise made by the scratchings and clawings on the roof give warning for the inhabitants to make their escape by the door, and bar the entrance behind them. It is not so easy to jump out of the house as into it, and in consequence, the neighbors speedily change the course of events by getting on the roof in their turn, and shooting the burglarious quadruped through the opening which its own claws had made.

A rather ludicrous adventure occurred to an old woman who was on her way home. She had just arrived in sight of her doorway, when she perceived a large Tiger crawl up to the entrance, and allured, probably, by the scent of provisions, walk coolly into her house. With great presence of mind she closed the door on the intruder, and calling for aid from her friends, soon had the satisfaction of placing her hand upon the Tiger's carcass as he lay on her floor, pierced with the missiles hurled at him through the window.

Many of these beautiful animals have been brought to America, and through the medium of Zoological Gardens and travelling menageries are familiar to us all. When caught in its first infancy, or when born and bred in captivity, the Tiger is as tameable an animal as the lion or any of the feline race, displaying great attachment to its keeper, and learning many small accomplishments, such as jumping through hoops and over sticks, enacting the part of a couch to its keeper, letting him pull its huge jaws open, and all with perfect good humor. These exhibitions, however, are never quite safe, and ought not to be permitted.

On some occasions the animal may be in a bad temper, and not willing to go through its performances, and upon being urged strongly to act against its inclination, may turn upon its persecutor and inflict a fatal wound in a moment. The creature may not intend to commit murder, but its strength is so great that, having no mathematical knowledge of the theory of forces, it cannot calculate the effect of a blow from its paw, or a grip of its teeth. Such events have more than once occurred, one of which, the death of the well-known "Lion Queen," was singularly tragical. The Tiger was required by the "Lion Queen" to exhibit some part of his usual performances, and being in a sulky mood, refused to obey. The girl struck him with her whip, when he sprang upon her, forced her against the side of the cage, and seized her by the throat. She was almost immediately extricated from his grasp and removed from the cage, but although no apparently mortal injury had been inflicted, she died within a very few minutes.

Dissimilar as are the lion and Tiger, there has been an example of a mixed offspring of

these animals, the lion being the father and the Tigress the mother. The lion had been born and bred in captivity, and the Tigress had been captured at a very early age, so that the natural wildness of their character had been effaced by their captive life, in which they felt no need to roam after living prey, as their daily sustenance was always forthcoming.

UNLIKE the Tiger, which is confined to the Asiatic portion of the world, the LEOPARD is found in Africa as well as in Asia, and is represented in America by the Jaguar, or, perhaps, more rightly, by the Puma.

This animal is one of the most graceful of the graceful tribe of cats, and, although far less in dimensions than the tiger, challenges competition with that animal in the beautiful markings of its fur, and the easy elegance of its movements. It is possessed of an accomplishment which is not within the powers of the lion or tiger, being able to climb trees with singular

LEOPARD.—*Leopardus antiquorum.*

agility, and even to chase the tree-loving animals among their familiar haunts. On account of this power, it is called by the natives of India "Lakree-baug," or Tree-tiger. Even in Africa it is occasionally called a "Tiger," a confusion of nomenclature which is quite bewildering to a non-zoologist, who may read in one book that there are no tigers in Africa, and in another, may peruse a narrative of a tiger hunt at the Cape. Similar mistakes are made with regard to the American felidæ, not to mention the numerous examples of mis-called animals that are insulted by false titles in almost every part of the globe. For, in America, the Puma is popularly known by the name of the Lion, or the Panther, or "Painter," as the American forester prefers to call it, while the Jaguar is termed the "Tiger."

In Africa, the Leopard is well known and much dreaded, for it possesses a most crafty brain, as well as an agile body and sharp teeth and claws. It commits sad depredations on flocks and herds, and has sufficient foresight to lay up a little stock of provisions for a future day. A larder belonging to a Leopard was once discovered in the forked branches of a tree, some ten feet or so from the ground. Several pieces of meat were stowed away in this novel receptacle, and hidden from sight by a mass of leaves piled upon them.

When attacked, it will generally endeavor to slink away, and to escape the observation of its pursuers; but, if it is wounded, and finds no mode of eluding its foes, it becomes furious,

and charges at them with such determinate rage, that, unless it falls a victim to a well-aimed shot, it may do fearful damage before it yields up its life. In consequence of the ferocity and courage of the Leopard, the native African races make much of those warriors who have been fortunate enough to kill one of these beasts.

The fortunate hunter is permitted to decorate his person with trophies of his skill and courage, and is looked on with envy by those who have not been able to earn such honorable distinctions. The teeth of the Leopard are curiously strung, with beads and wire, into a necklace, and hung about the throat of the warrior, where they contrast finely with their polished whiteness against the dusky hue of the native's brawny chest. The claws are put to similar uses, and the skin is reserved for the purpose of being dressed and made into a cloak, or "kaross," as this article of apparel is popularly termed. The tail is cut off, and, being hung to a string that passes round the waist, dangles therefrom in a most elegant and fashionable manner. If a Kaffir is able to procure some eight or ten tails, which he can thus suspend around his person, he is at the very summit of the aristocratic world, and needs no more attractions in the eyes of his comrades. Generally these "tails" are formed from the skin of the monkey, which is cut into strips, and twisted so as to keep the hairy side of the fur outwards. But these are only sham tails, and are as nothing in comparison to the real tail which is taken from a veritable Leopard.

The natives seem in some way to connect the Leopard's skin with the idea of royalty, and to look upon it as part of the insignia of majesty, even when it is spread on the kingly throne, instead of hanging gracefully from the kingly shoulders. And, though the throne be but a mound of earth, and the shoulders be redolent with rancid grease, yet the native African monarch exercises a sway not less despotic than that of the former Turkish Sultans.

The Leopard, like most of the feline tribe, is very easily startled, and, if suddenly alarmed, will in most cases make off with the best speed possible. As the creature is so formidable a foe, it may be imagined that to meet it on equal terms would be a proceeding fraught with the utmost danger. Yet this is not the case, for there are innumerable instances of such rencontres, where both parties seemed equally surprised by the meeting, and equally anxious to shorten its duration as much as possible. One of these adventures, which was told me by Captain Drayson, R.A., who had learned the tale from the hero—if so he may be called—of the narrative, was a most singular one, and one in which was more of peril than is usually the case.

A Dutch Boer—one of the colonists of Southern Africa—was travelling across country, and, permitting the wagons to precede him at their slow uniform pace, amused himself by making a wide detour in search of game. Towards the end of his circuit, and just as he was coming in sight of the wagons in the far distance, he came upon a clump of scattered rocks, from which suddenly leaped no less then seven Leopards. In the hurry of the moment he acted in a very foolish manner, and fired his single-barrelled gun at the group. Fortunately for himself, the result of the adventure turned out better than he deserved; for, instead of springing upon the Boer, who was quite at the mercy of so formidable a party, the Leopards only started at the report of the gun, and one or two of them, leaping on their hind legs, clawed at the air as if they were trying to catch the ball as it sang by their ears.

In its own country the Leopard is as crafty an animal as the British fox; and being aided by its active limbs and stealthy tread, gains quiet admission into many spots where no less cautious a creature could plant a step without giving the alarm. It is an inveterate chicken-stealer, creeping by night into the hen-roosts, in spite of the watchful dogs that are on their posts as sentinels, and destroying in one fell swoop the entire stock of poultry that happen to be collected under that roof. Even should they roost out of doors they are no less in danger, for the Leopard can clamber a pole or tree with marvellous rapidity and with his ready paw strike down the poor bird before it is fairly awakened.

The following narratives of the Cape Leopard and its capture are taken from the anecdotes so kindly placed at my disposal by Captain Drayson.

THE LEOPARD acts in a very subtle manner, remaining in some unlikely spot near a village, and committing a great amount of havoc before its whereabouts is discovered. I knew

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LEOPARD.

that two Leopards were located in the bush at Natal within half a mile of the barracks, and yet they were never seen. The disappearance of a dog and a stray pig were the only indications that they gave to the non-observers of their being in the vicinity.

I became acquainted with their presence in rather a curious way. Being alone in the bush one day, as was my usual custom, I sat down under the shade of a dark Euphorbia, to watch the habits of a chameleon which I had caught. I set him upon a branch, and saw him try every change of color of which he was capable. At first he was a dull green, then some spots of brown came over him, and he changed all over of a brownish tint; when I irritated him with my finger he opened his comical mouth and gave a gaping sort of hiss, whilst his swivel eyes pointed each in different directions at the same time.

Suddenly I heard the scream of a buck at a short distance from me; and concluding that the animal had been caught in a trap set by the Kaffirs, I grasped my gun, and pushed through the underwood towards the spot. Before I had gone far the noise ceased, and when I reached the place whence I conceived it had come, I saw nothing remarkable; there was no sign of a buck or of a trap. I therefore examined for spoor, and found that there had been a scuffle on the ground; and a few yards from the sign blood-spots lay on the leaves, together with small pieces of fur which I recognized as belonging to a Leopard.

I followed the trail for some distance, but at length lost it. On several successive occasions I went over the ground, and always found the spoor of one, and sometimes of two Leopards, either fresh or a day or two old.

It is a practice of this cunning animal to take up its position near a village, and then go to the farms of another village quite at a distance, so that its lair shall neither be suspected nor discovered.

THE LEOPARD when seen in its wild state is a most beautiful and graceful animal; its motions are easy and elastic, and its agility amazing. Although far inferior to the tiger in size, strength, and intrepidity, and though it shuns man, it is nevertheless, when wounded or driven to desperation, a most formidable antagonist. When hunted with dogs, the Leopard usually takes to a tree, if one should happen to be near. But to approach him here is a proceeding fraught with danger; for from this elevated position he will leap to the ground, and with one spring will be beside his pursuer, who will then fare badly unless he be sufficiently handy with his gun to kill (not wound) the animal in its advance. The Leopard usually selects some elevated position from which to bound upon his prey as it passes underneath.

I have been told by Hottentots and Kaffirs that this animal has the habit of lying on the ground half concealed by long grass or branches, and then twisting itself about so as to attract the attention of any antelope which may be near. The Leopard, being aware that curiosity is one of the failings of the antelope tribe, carries on its mysterious movements until its victim approaches to investigate what is going on, when it springs on and kills the weak-minded animal.

It is a well-known fact that the Leopard does a very good business when it devotes its attention to a herd of baboons. Success in this line speaks well for the Leopard; for he must be an adept in stalking who succeeds in surprising and capturing one of these wide-awake caricatures of humanity. I suspect, however, that the victims are either the old and infirm, or those reckless youngsters who have not paid sufficient attention to the instructions which their anxious parents have endeavored to instil into them.

It may by said, and with some truth, that when hunting and shooting are made the regular business of life, and more important pursuits neglected, we are merely expending our abilities and sacrificing our energies upon a frivolous pleasure. These objections may certainly have some weight when they are directed against those who devote the whole of their time to mere sporting matters; whereas field sports should merely be taken up as a relaxation, and as a means of obtaining exercise and skill in those affairs which make an individual "more of a man." But these requirements cannot be employed against those who, having a great amount of leisure, occupy their time in hunting such animals as are to be found in India and Africa, and in ridding the country of man-eating tigers and lions, destructive Leopards, or other dangerous and formidable neighbors,—and even when engaged in the pursuit of less noble

game. The African sportsman is either providing himself and his servants with venison, or is enabled to feed whole families of hungry Kaffirs, who have fasted from meat for many days.

To shoot or capture a Leopard is therefore useful as well as gratifying, and we shall be sure when we catch one of these beasts to have the opportunity of punishing either an old offender or one that is likely to become so.

When the Leopard has committed many deeds of rapine in one locality, he often appears to think it better to decamp and try some far-removed scene of operations.

THE habits of the Indian Leopard are almost identical with those of its African relative. Equally cautious when caution is necessary, and equally bold when audacity is needed, the animal achieves exploits of a similar nature to those which have been narrated of the African Leopard. The following anecdote is a sample of the mixed cunning and insolence of this creature.

An ox had been killed, and the joints were hung up in a hut, which was close to a spot where a sentry was posted. In the evening the sentry gave an alarm that some large animal

BLACK LEOPARD.

had entered the hut. A light was procured and a number of people searched the several rooms of which the hut was composed, without discovering the cause of the alarm. They were just about to retire, when one of the party caught sight of a Leopard, which was clinging to the thatched roof immediately above the hooks on which the meat was suspended. No sooner did the animal discover that its presence was known, than it dropped to the floor, laid about it vigorously with its claws, and leaping through the doorway, made its escape, leaving several souvenirs of its visit in various scratches, one of which was inflicted on the sentry who gave the alarm, and kept him to his bed for several weeks.

The consternation caused by such an attack was very great, and many who escaped the Leopard's claws, suffered severely from bruises which they received in the general rush towards the door.

The usual color of the Leopard's fur is a golden-yellow ground, which is thickly studded with dark rosette-shaped spots. The form of the rosettes and the color of the fur are by no means uniform.

There are some Leopards whose fur is so very dark as to earn for them the name of Black Leopard. This is probably only a variety, and not a distinct species. Although at first sight this Leopard appears to be almost uniformly black, yet on a closer inspection it is seen to be furnished with the usual pardine spots, which in certain lights are very evident. There have been often exhibited sundry Leopards of an exceedingly dark fur, and yet partaking largely

of the distinct spottings of the ordinary Leopard. These were a mixed breed between the Black Leopard and the Leopard of Africa. The black variety of this animal is found in Java, and has by some authors been considered as a separate species under the title of "Felis (Leopardus) melas," the latter word being a Greek term, signifying "black."

The strength of the Leopard is marvellous when compared with its size. One of these animals crept by night into the very midst of a caravan, seized two wolf-greyhounds that were fastened to one of the tent pegs, tore up the peg to which they were tethered, and although both the dogs were linked together, and were of that powerful breed which is used for the pursuit of wolves and other fierce game, the Leopard dragged them clean out of the camp and carried them for some three hundred yards through dense thorny underwood. A pursuit was immediately set on foot, and the dogs rescued from the daring foe. To one of them aid came too late, for its skull was literally smashed by a blow from the Leopard's paw. The same animal had sprung upon and killed a goat which was picketed in the midst of the numerous servants that accompany an European.

Another Leopard committed an act of audacity which very much resembled the exploit of the roof-clinging Leopard mentioned before in these pages.

In a native hut some goats were kept, and as night had drawn on, the human inhabitants of the hut were beneath the shelter of their own roof. A Leopard which was prowling about, and was probably attracted either by the bleating or the scent of the goats, clambered up the low walls of the hut, and tearing away with his claws the fragile thatch, leaped into the middle of the room. In this case, the Leopard fared well enough, for the terrified inhabitants were without arms, and as soon as they saw the unexpected visitor come tumbling through the roof, they hid themselves like so many lean Falstaffs, in some wicker corn baskets that were standing in the hut, leaving the Leopard to his own devices and in full possession of the ground.

The Leopard has a curious and ingenious habit of obtaining a meal. He pays a visit to some village, and taking up a convenient post, at some little distance, sets up a loud and continuous growling.

The pariah dogs, which swarm in every village, present a curious contradiction of qualities. At the sound of a Leopard's voice they will rush furiously to the spot, uttering their yelling barks, as if they meant to eat up the enemy on the spot. But when they come to close quarters, self-preservation obtains the upper hand, and they run away as fast as they had appeared, turning again and baying at their foe as soon as they see that he is not pursuing them. These habits render them of invaluable assistance to the hunter, who employs the pariah dogs to point out the locality of his fierce quarry, and to distract its attention when found.

So at the sound of the angry growl, out rush the pariahs towards the spot from whence the sounds proceeded, yelping as if they would split their throats by the exertion. To draw the dogs away from the protecting vicinity of man is just the object of the concealed Leopard, who springs from his hiding place upon one of the foremost dogs, and bounds away into the woods with his spoil.

Fond as is the Leopard of well wooded districts, it appears to have a distaste for trees around which there is no underwood. The long grass jungle which is so favored by the tiger, is no way suited to the habits of the Leopard; so that if the hunter seeks for tigers, his best chance of success is by directing his steps to the grass jungles, while, if Leopards are the objects of his expedition, he is nearly sure to find them among wooded places where the trees are planted among underwood reaching some seven or eight feet in height.

When a Leopard is "treed," *i.e.* driven to take refuge in a tree, it displays great skill in selecting a spot where it shall be concealed so far as possible from the gazers below, and even when detected, covers its body so well behind the branches, that it is no easy matter to obtain a clear aim at a fatal spot. Its favorite arboreal resting places are at the junction of the larger limbs with the trunk, or where a large bough gives off several smaller branches. The Leopard does not take to water so readily as the tiger, and appears to avoid entering a stream unless pressed by hunger or driven into the water by his pursuers. When fairly in the water, however, the Leopard is a very tolerable swimmer, and can cross even a wide river without difficulty.

The Leopard has often been tamed, and indeed, almost domesticated, being permitted to range the house at will, greatly to the consternation of strange visitors. This complete state of docility can, however, only take place in an animal which has either been born in captivity, or taken at so early an age that its savage propensities have never had time to expand. Even in this case, the disposition of the creature must be naturally good, or it remains proof against kindness and attention, never losing a surliness of temper that makes its liberation too perilous an experiment. The very same treatment by the same people will have a marvellously different effect on two different animals, though they be of the same species, or even the offspring of the same parents.

Some years ago, a couple of Leopards, which lived in England, afforded a strong proof of the innate individuality of these animals. One of them, a male, was always sulky and unamiable, and never would respond to offered kindnesses. The female, on the contrary, was most docile and affectionate, eagerly seeking for the kind words and caresses of her keeper. She was extremely playful, as is the wont of most Leopards, and was in the habit of indulging in an amusement which is generally supposed to be the specialty of the monkey tribe. Nothing pleased her so well as to lay her claws on some article of dress belonging to her visitors, to drag it through the bars of her cage and to tear it in pieces. Scarcely a day passed that this amusingly mischievous animal did not entirely destroy a hat, bonnet, or parasol, or perhaps protrude a rapid paw and claw off a large piece of a lady's dress.

The cubs of the Leopard are pretty, graceful little creatures, with short pointed tails, and spots of a fainter tint than those of the adult animal. Their number is from one to five. Even in captivity, the Leopard is a most playful animal, especially if in the society of companions of its own race. The beautiful spotted creatures sport with each other just like so many kittens, making, with their wild, graceful springs, sudden attacks upon one companion, or escaping from the assaults of another, rolling over on their backs, and striking playfully at each other, and every now and then uniting in a general skirmishing chase over their limited domains.

Even when they are caged together with lions and tigers, their playfulness does not desert them, and they treat their enormous companions with amusing coolness. I remember seeing rather a comical example of the sportful propensities which take possession of the Leopard. Several of the feline race, such as lions, tigers, and Leopards, were shut up in a rather large cage, and being docile animals, had been taught some of the usual tricks which are performed by tamed felidæ. They jumped through hoops, or over the keeper's whip, always taking advantage of the barred front of their den to afford a temporary support in their leaps; they stood on their hind legs, they rolled on their backs, and opened their huge jaws at the word of command, and, in fine, went through the established feline accomplishments.

Among the inhabitants of the cage, two were specially conspicuous. One was a very fine lion, all-glorious in redundant mane and tufted tail, demure and dignified in movement,—as became the monarch of the predacious animals. The other was a slight, agile, malapert Leopard, who recked little of dignities, and, so that he could play a saucy trick, cared nothing for the personal stateliness of the object of his joke.

One day, the imprisoned animals had gone through their several performances with the usual accompaniments of growls and snarls, when the lion, as if to assert his dignity,—which had been somewhat chafed by his obedience to the commands of his keeper,—began to parade up and down the den in a solemn and stately manner, his nose thrown up, and his tail held perfectly erect, with the tufted tip bending to and fro in a majestic and condescending manner. The Leopard had, in the meantime, taken up his post on a little wooden bracket that was hitched over the upper bars of the cage, and formed a portion of the machinery that was employed in the exhibition. As this bracket was hooked over the bars of the cage, and the lion was parading in the very front of the den, it necessarily happened that the perpendicularly held tail, with its nodding tuft, passed immediately under the little bracket whereon the Leopard had poised himself in a compact and cat-like manner.

Every time the lion passed beneath, the Leopard protruded a ready paw, and hit the black tip of the lion's tail a rather hard pat. The owner of the aggrieved tail took no notice of this

insult, so the Leopard improved his amusement by lying on the bracket in such a manner, that both its fore paws were at liberty. As the lion passed and repassed below, the Leopard struck the tail-tuft first to one side, and then to the other, so that it enjoyed two blows at the lion's tail instead of one. The lion, however, disdained to take the least notice, and the Leopard continued its amusement until the keeper put an end to the game by entering the cage, and commencing the performances afresh.

There are two titles for this animal; namely, the Leopard, and Panther, both of which creatures are now acknowledged to be but slight varieties of the same species. The OUNCE, however, which was once thought to be but a longer haired variety of the Leopard, is now known to be truly a separate species.

In general appearance it bears a very close resemblance to the leopard, but may be distinguished from that animal by the greater fullness and roughness of its fur, as well as by some variations in the markings with which it is decorated. From the thickness of its furry garment, it is supposed to be an inhabitant of more mountainous and colder districts than the

OUNCE.—*Leopardus uncia.*

leopard. The rosette-like spots which appear on its body are not so sharply defined as those of the leopard; there is a large black spot behind the ears. The spots exhibit a certain tendency to form stripes, and the tail is exceedingly bushy when compared with that of a leopard of equal size. The general color of the body is rather paler than that of the leopard, being a grayish white, in which a slight yellow tinge is perceptible, and, as is usual with most animals, the upper parts of the body are darker than the lower. The Ounce is an inhabitant of some parts of Asia, and specimens of this fine animal have been brought from the shores of the Persian Gulf. In size, it equals the ordinary leopard of Asia or Africa.

The feline animals which have hitherto been described belong to the African and Asiatic continents, with their neighboring islands. Passing to the New World, we find the feline races well represented by several most beautiful and graceful creatures, of which the JAGUAR is the largest and most magnificent example.

Closely resembling the leopard in external appearance, and in its arboreal habits, it seems to play the same part in America as the leopard in the transatlantic continents. It is a larger animal than the leopard, and may be distinguished from that animal by several characteristic differences.

In the first place, the tail is rather short in proportion to the size of its owner, and, when the animal stands upright, only just sweeps the ground with its tip. Across the breast of the Jaguar are drawn two or three bold black streaks, which are never seen in the leopard, and which alone serve as an easy guide to the species. The spots, too, with which its fur is so liberally studded, are readily distinguishable from those of the leopard by their shape and arrangement. The leopard spots are rosette-shaped, and their outlines are rounded, whereas those of the Jaguar are more angular in their form. But the chief point of distinction is found in a small mark that exists in the centre of the dark spots which cover the body and sides. In many instances, this central mark is double, and, in order to give room for it, the rosettes are very large in proportion to those of the leopard. Along the spine runs a line, or chain, of black spots and dashes, extending from the back of the head to the first foot, or eighteen inches, of the tail.

The color is not quite the same in all specimens. Many Jaguar skins have an exceedingly rich depth of tinting, and are very highly valued, being worth rather more than fifteen dollars. They are chiefly used for military purposes, such as the coverings of officers' saddles in certain cavalry regiments. Sometimes, a black variety of the Jaguar is found, its color being precisely similar to that of the Black Leopard, mentioned before.

The whole fur seems to take the tint of the dark spots, while the spots themselves are just marked by a still deeper hue. Probably, the cause of this curious difference in tint may be, that in the blood of the individual Jaguar there exists a larger quantity than usual of iron, which metal, as is well known, is found to form one of the constituents of blood. It can be extracted in the metallic form, and resembles very fine sand. In the human blood, late researches have discovered that the blood of the negro is peculiarly rich in iron, and it seems but reasonable that a similar cause will account for the very great variation in the leopard's and Jaguar's fur.

This beautiful animal is familiar to us through the medium of many illustrated works on natural history, and also on account of the numerous species which have been transmitted to this country. One of these creatures, which was taken to England by Captain Inglefield, and placed in the collection of the Zoological Gardens, was so gentle and docile, that it directly controverted the once popular notion that the Jaguar is an irreclaimable and untamable animal. It was a general pet on the voyage, and, from an account of its proceedings while on board ship, I am indebted to Captain Inglefield himself.

The Jaguar was named "Doctor," and was as well acquainted with its name as any dog. It was at times rather lazy, and loved to lie at full length on deck, and stretch its limbs to their full extent. It was so perfectly tame that Captain Inglefield was accustomed to lie down by the side of the spotted favorite, using its body as his pillow. When the vessel arrived in harbor, and people were anxious to view the Jaguar, the creature walked to the stable where it was to be exhibited, merely being led by its chain. It was a remarkable circumstance, that, although the animal was so entirely tame and gentle towards men, and would let them pull it about in their rough play, it could never be trusted in the presence of a little child, nor of a dog. In either case, the animal became excited, and used to stretch its chain to its utmost limit.

Uncooked meat was never permitted in its diet, and, except in one or two instances, when the animal contrived to obtain raw flesh, it was fed exclusively on meat that had been boiled. One of these exceptional cases was rather amusing.

At Monte Video, the admiral had signalled for the captains of H. M. ships to come on board and dine with him. His cook was, of course, very busy on the occasion, and more especially so, as there was at the time rather a scarcity of fresh provisions. The steward had been making the necessary arrangements for the entertainment, and came on board carrying a leg of mutton and some fowls. Just as he stepped on deck, the Jaguar bounced out of his hiding-place, and, clutching the meat and fowls out of the steward's hands, ran off with them. The fowls were rescued by the captain, who got them away from the robber undamaged, with the exception of their heads, which had been bitten off and eaten, but the mutton was past reclaiming, and so, to the great disgust of the cook and steward, the bill of fare had to be altered.

JAGUAR.

When "Doctor" received his daily food, he used to clutch and growl over it like a cat over a mouse, but was sufficiently gentle to permit the meat to be abstracted. In order to take away the animal's food, two men were employed, armed with large sticks, one of whom took his place in front of the Jaguar, and the other in the rear. When all was arranged, the man in the rear poked "Doctor" behind, and, as he turned round to see what was the matter, the man in front hooked away the meat with his stick. However the animal might growl over its food, and snarl at any one who approached, it would become perfectly quiet and gentle as soon as the cause of anger was removed.

It was a very playful animal, and was as mischievous in its sport as any kitten, delighting to find any one who would join in a game of romps, and acting just as a kitten would under similar circumstances. As the animal increased in size and strength, its play began to be rather too rough to be agreeable, and was, moreover, productive of rather unpleasant consequences to its fellow voyagers. For, as is the custom with all the cat tribe, the Jaguar delighted in sticking its talons into the clothes of its human playfellows and tearing them in a disastrous manner. The creature was so amusing that no one could resist the temptation of playing with it, and so the evil was remedied by docking the "Doctor's" claws of their sharp points.

This animal was about two years old when it was brought to England. Two years after its arrival, Captain Inglefield went to see his old favorite, the "Doctor," and found that the Jaguar recognized him in spite of the long interval of time, and permitted him to pat its head and to open its mouth.

In its native land, the Jaguar ranges the dense and perfumed forests in search of the various creatures which fall victims to its powerful claws. The list of animals that compose its bill of fare is a large and comprehensive one, including horses, deer, monkeys, capybaras, tapirs, birds of various kinds, turtles, lizards, and fish; thus comprising examples of all the four orders of vertebrated animals. Nor does the Jaguar confine itself to the vertebrates. Various shell-fish, insects, and other creatures fall victims to the insatiate appetite of this ravenous animal.

It seems strange that such powerful creatures as horses should be reckoned among the prey of the Jaguar, for it would seem unlikely that the muscular force of the animal could be equal to the task of destroying and carrying away so large a quadruped as a horse. Yet such is truly the case; and the Jaguars commit infinite havoc among the horses that band together in large herds on the plains of Paraguay. A Jaguar has been known to swim across a wide river, to kill a horse, to drag it for some sixty yards to the water side, to plunge it into the stream, to swim across the river with its prey, to drag it out of the water after reaching the opposite bank, and, finally, to carry it off into a neighboring wood. The natives of the country where the Jaguar lives assert that even when two horses have been fastened to each other, the Jaguar has been known to kill one of them, and to drag off the living and the dead horse in spite of the strength of the survivor.

These seem to be marvellous exploits, when the ordinary size of the Jaguar is taken into consideration. But Humboldt, than whom is no better or more trustworthy authority, says that he saw a Jaguar, "which in length surpassed that of all the tigers of India which I had seen in the collections of Europe."

The favorite food of the Jaguar—when he can get it—is the flesh of the various monkeys. But to catch a monkey is not the easiest task in the world, and in general can only be achieved by leaping upon the prey from a place of concealment, or by surprising the monkeys while sleeping. Sometimes it is fortunate enough to get among a little band of monkeys before they are aware of the presence of the dreaded foe, and then seizes the opportunity of dealing a few fierce strokes of its terrible paw among the partly-awakened sleepers, thus dashing them to the ground, whither it descends to feast at leisure on the ample repast. The fierce hoarse roar of the Jaguar and the yells of terror that come from the frightened monkeys resound far and wide, and proclaim in unmistakable language the deadly work that is going on among the trees.

Peccaries are also a favorite article of diet with the Jaguar, but he finds scarcely less

difficulty in picking up a peccary than in knocking down a monkey. For the little, active, sharp-tusked peccary is even more swinishly dull than is usual with its swinish relatives, and, being too thick-headed to understand danger, is a very terrible antagonist to man or beast. It seems to care nothing for size, weapons, or strength, but launches itself as fearlessly on a Jaguar or an armed man as on a rabbit or a child. So, unless the Jaguar can manage quietly to snap up a straggler, he has small chance with a herd of these war-like little pigs, which, if they caught a Jaguar among them, would cut him so severely with their lancet-like teeth, that he would ever repent his temerity, even if he escaped with his life.

One of the easiest animals to obtain is that huge and timid rodent, the capybara, which is not sufficiently swift of foot to escape by flight, nor agile of limb to bound out of reach of its enemy, nor furnished with natural arms with which to defend itself against his assaults. Should it take to the water, and so endeavor to elude pursuit, the Jaguar is in nowise disconcerted, for he is nearly as familiar with that element as the capybara itself, and thus seldom fails in securing his prey. When the Jaguar strikes down a large animal, such as a horse or a deer, it performs its deadly task in a very curious manner. Leaping from some elevated spot upon the shoulders of the doomed animal, it places one paw on the back of the head and another on the muzzle, and then, with a single tremendous wrench, dislocates the neck. With smaller creatures, the Jaguar uses no such ceremony, but with a blow of the paw lays its prey dead at its feet.

With the exception of such animals as the long-tailed lizards, the food of the Jaguar is of a nature that human hunters would not disdain, and in many instances would meet the approbation of a professed epicure. Of turtles and their eggs the Jaguar is particularly fond, and displays great ingenuity and strength in the securing, killing, and eating such impracticable animals as turtles. Any one who has handled a common land tortoise would be wofully puzzled if he were ordered to kill that strong mailed creature without the aid of tools, and still more bewildered, were his only meal that day to consist of the flesh that was locked in so hard and impenetrable a covering. As to a huge turtle in the vigor of active health, scuttling over the sandy shores, throwing up showers of blinding dust with its flippers, and ready to snap at an intruder with its sharp-edged jaws, he must be a powerful man who would arrest the unwieldy creature in its onward progress, and a very clever one who would make a dinner upon the flesh of the reptile.

Yet the Jaguar contrives to catch, kill, and eat the turtle, displaying in this feat equal strength and ingenuity.

Watching a turtle as she—for it is generally the female turtles that are made the Jaguar's prey—walks riverwards, or seawards, as the case may be, after depositing her eggs under a slight covering of earth, there to be warmed into being by the genial rays of the sun, the Jaguar springs upon the creature as it is slowly making its way to its familiar element, and with a quick and adroit movement of the paws, turns the turtle on its back. There the poor reptile lies, helpless, and waiting until its captor is pleased to consummate his work by killing and eating the animal which he has thus ingeniously intercepted. The Jaguar needs no saw to cut through the bony shell, nor lever to separate the upper from the lower portion, nor knife to sever the flesh from the bones, for his paw stands him in the stead of these artificial instruments, and serves his purpose right well. Tearing away as much as possible of the softer parts that lie by the tail, the Jaguar inserts his supple paw, armed with its sharp talons, and scoops out, as neatly as if cut by knives, the flesh, together with the vital organs of the devoted chelonian. The difficulty of this task can only be rightly appreciated by those who have undertaken a similar task, and have achieved the feat of removing the interior of a tortoise or turtle without separating the upper and under shells.

The eggs of the turtle are nearly as important to the Jaguar as is the flesh of the mother turtle herself. After inverting the maternal turtle, the Jaguar will leave her in her impotent position, and going to the shore, coolly scoop out and devour the soft leather-covered eggs which she had deposited in the sandy beach in vain hopes of their seasonable development by the warm sunbeams.

Birds are simply struck down by a single blow of the Jaguar's ready paw; and so quick

are his movements, that, even if a bird has risen upon the wing, he can often make one of his wonderful bounds, and with a light, quick stroke, arrest the winged prey before it has had time to soar beyond his reach. As to the fish, the Jaguar watches for them at the water side, and as soon as an unfortunate fish happens to swim within reach of the spotted foe, a nimble paw, with outstretched talons, is suddenly thrust forth, and the fish swept out of the water upon dry land.

The Jaguar is quite as suspicious and cautious an animal as any of the Old World felidæ, and never will make an open attack upon man or beast. Should a solitary animal pass within reach, the Jaguar hesitates not in pouncing upon it; but if a herd of animals, or a party of men, should be travelling together, the Jaguar becomes very cautious, and will dog their steps for many miles, in hopes of securing one of the party in the act of straggling. If the Jaguar should be very hungry indeed, and unable to wait patiently, it will yet temper audacity with caution, and though it will, under that urgent necessity, seize one out of the number, it will always choose that individual which is hindermost, hoping to escape with its prey before the companions can come to the rescue. A Jaguar has been known to follow the track of travellers for days together, only daring to show itself at rare intervals.

In the countries where the Jaguar most abounds, many tales are rife respecting the strength, agility, and audacity of this fierce animal. When the earlier settlers fixed their rough wooden huts in the recesses of the American forests, the Jaguar was one of their most persistent and relentless foes. Did they set up a poultry-yard, the Jaguar tore open the hen roosts, and ate the fowls. Did they fill their stables with horses, the Jaguar broke their necks, and did his best to carry the heavy carcasses to his forest home. Did they establish a piggery, the Jaguar snapped up sow and litter; and in fine, it was hardly possible to secure their live stock so effectually that it could not be reached by this ravenous beast. The only resource was to kill the Jaguar himself, and so to put an effectual stop to his depredations. But there are many Jaguars in a district; and for a term of years, the toil of ridding the country of these fierce marauders was a most arduous one. However, perseverance and indomitable courage gained the day at last, and the Jaguars were forced to retire from the habitations of men, and hide themselves in the thick uncultivated forest land.

Its beauty is remarkable; indeed, this characteristic has gained for it the appellation of the American Tiger. It is found as far north as Eastern Texas, extending to Red River, and south through Brazil, where it is the terror of all the smaller mammals. Its western limit is near the Gaudeloupe Cañon (*Sierra Madre*).

The Jaguar is the representative of the Leopard on this continent, and though larger, is very closely allied to it.

The Zoological collection at Central Park has two fine examples of this great cat, in the best condition of adult pelt.

The large Jaguar lately at the Central Park collection, which belongs to Van Amburg's Menagerie, has been in confinement many years. At one time, while on the road, the cage of the large boa constrictor required repairing. Its glass door was newly set in putty. During the following night the huge folds of the snake chanced to push the glass from its frame. The cage of the Jaguar was near, and the snake having found itself at liberty, paid a neighborly visit to the cat. The night watchman, on arriving, in the course of his rounds, at the scene, found the Jaguar, whose prowess is not wont to be arraigned for trifles, was crouched in one corner of his cage, utterly impotent with fear, and even expressing in his face the torture he was subjected to, while the stolid, unconcerned serpent lay, all innocent of harmful motive, coiled around the bars of the cage, his head peering in and out of the perilous presence of the great beast.

The Jaguar exhibits his great physical strength in killing and tearing open the great sea turtles. Humboldt saw one exceeding the size of the Indian Tiger.

The superb cut of this cat is a most perfect representation of his characteristics.

THE SERVAL, or "Bosch-katte," *i.e.* "Bush-cat," as it is appropriately termed by the Dutch colonists of the Cape, is an inhabitant of Southern Africa. It is a very pretty animal,

both with regard to the color of its fur and the elegant contour of its body. The short, puffy tail, however, rather detracts from the general effect of the living animal. On account of the bold variegations of the Serval's fur, its skin is in great request, and finds a ready sale among furriers, who know it by the name of the Tiger-cat.

The ground color of the Serval's fur is of a bright golden tint, sobered with a wash of gray. The under portions of the body and the inside of the limbs are nearly white. Upon this ground are placed numerous dark spots, which occasionally coalesce and form stripes. In number

SERVAL.—*Leopardus serval.*

and size they are very variable. The ears are black, with a broad white band across them, and from their width at the base, they give the animal a very quaint aspect when it stands with its head erect.

In disposition, the Serval appears to be singularly docile, and even more playful than the generality of the sportive tribe of cats. It is not a very large animal, measuring about eighteen inches in height, and two feet in length, exclusive of the tail, which is ten inches long, and covered with thick, bushy fur.

FEW animals have been known by such a variety of names as the PUMA of America.

Travellers have indifferently entitled it the American Lion, the Panther, the Cougar, the Carcajou (which is an entirely different animal), the Gouazouara, the Cuguacurana, and many other names besides. For the name of Lion, the Puma is indebted to its uniform tawny color, so different from the conspicuous streaks and spots which decorate the fur of its congeners. It was entitled a Panther, on account of its pardine habits, which are almost identical with those of the spotted leopards of both continents. The word Cougar is a Gallican abbreviation of the Paraguay word Gouazouara; and then the names Carcajou and Quinquajou are simply instances of mistaken identity. The Anglo-Americans compromise the matter by calling the creature a "painter."

It is rather a large animal, but, on account of its small head, appears to be a less powerful creature than really is the case. The total length of the Puma is about six feet and a half, of

which the tail occupies rather more than two feet. The tip of the tail is black, but is destitute of the black tuft of long hair which is so characteristic of the true lion. Its limbs are extremely thick and muscular, as needs be for an animal whose life is spent almost entirely in climbing trees, and whose subsistence is gained only by the exercise of mingled activity and force.

The color of the Puma is an uniform light tawny tint, deeper in some individuals than in others, and fading into a beautiful grayish-white on the under parts. It is remarkable that the young Puma displays a gradual change in its fur, nearly in the same way as has been narrated of the lion cub. While the Puma cubs are yet in their first infancy, their coat is marked with several rows of dark streaks extending along the back and sides, and also bears upon the neck, sides, and shoulders many dark spots, resembling those of the ordinary leopard. But, as the animal increases in size, the spots fade away, and, when it has attained its perfect development, are altogether lost in the uniform tawny hue of the fur.

PUMA.—*Leopardus concolor.*

Until it has learned from painful experience a wholesome fear of man, the Puma is apt to be a dangerous neighbor. It is known to track human beings through long distances, awaiting an opportunity of springing unobservedly upon a heedless passer-by. A well-known traveller in American forest lands told me candidly, that he always ran away from "Grizzlys," *i. e.* grizzly bears, but that "Painters were of no account." He said that as long as a traveller could keep a Puma in sight, he need fear no danger from the animal, for that it would not leap upon him as long as its movements were watched.

Even in those rare instances where the Puma, urged by fierce hunger, issued boldly from the dark leafage of the woods, and ventured to track the very pathway that was trodden by the travellers, there was yet no real danger. The Puma would creep rapidly towards the party, and would, in a short time, approach sufficiently near to make its fatal spring. But if one of the travellers faced sharply on the crawling animal, and looked it full in the face, the beast was discomfited at once, and slowly retreated, moving its head from side to side, as if trying to shake off the influence of that calm steady gaze to which it had never been

accustomed, and which was a positive terror to the rapacious animal. A caged leopard has displayed a similar uneasiness at a fixed gaze of a spectator, and has finally been so quelled that in its restless walk it dared not turn its face towards its persecutor.

Although it is not an object of personal dread to the civilized inhabitants of the forest lands, the Puma is a pestilent neighbor to the farmer, committing sad havoc among his flocks and herds, and acting with such consummate craft, that it can seldom be arrested in the act of destruction, or precluded from achieving it. No less than fifty sheep have fallen victims to the Puma in a single night. It is not, however, the lot of every Puma to reside in the neighborhood of such easy prey as pigs, sheep, and poultry, and the greater number of these animals are forced to depend for their subsistence on their own success in chasing or surprising the various animals on which they feed. As is the case with the jaguar, the Puma is specially fond of the capybara and the peccary, and makes a meal on many smaller deer than even the latter animal.

Such creatures as are unfortunate enough to please the taste of the Puma, are nearly always taken by surprise, and struck down before they are even aware of the vicinity of their tawny foe. The Puma loves to hide upon the branches of trees, and from that eminence to launch itself upon the doomed animal that may pass within reach of its active leap and its death-dealing paw.

While thus lying upon the branches, the creature is almost invisible from below, as its fur harmonizes so well with the brown bark which covers the boughs, that the one can scarcely be distinguished from the other. Even when imprisoned within the limits of a cage, where the eye has no great range of objects for inspection, the Puma will often lie so closely pressed against a shelf, or flattened upon the thick boughs which are placed in its cell, that the cage appears at first sight to be empty, even though the spectator may have come to it with the express object of inspecting the inhabitants. It may therefore be easily imagined how treacherous a foe the Puma may be when ranging at will among the countless trees of an American forest.

The flesh of this animal is said, by those who have made trial of it, to be a pleasant addition to the diet scale, being white, tender, and of good flavor. When taken young, the Puma is peculiarly susceptible of domestication, and has been known to follow its master just like a dog. The hunters of the Pampas are expert Puma slayers, and achieve their end either by catching the bewildered animal with a lasso, and then galloping off with the poor creature hanging at the end of the leather cord, or by flinging the celebrated bolas—metal balls or stones fastened to a rope—at the Puma, and laying it senseless on the ground with a blow from the heavy weapon.

The Puma is the largest and most powerful of the North American cats, if we except the jaguar, which is more properly a southern species, being found mostly in South America, and as far north, occasionally, as Eastern Texas. Its entire range is from the extreme south of the continent, at the Straits of Magellan, to the northern portion of the State of New York. It has been quite common along the great range of the Blue Ridge, and northward to the Catskills and Adirondacks, but is rarely found north of this region. Before the settlement of the country, it ranged over all the New England States. It reaches in size the dimensions of the largest dog, and weighs about 150 pounds, the heaviest recorded being 200 pounds. It is cowardly, though possessing great strength and ferocity, approaching its prey stealthily.

Some interesting facts are recorded by Dr. Merriam in his work on the Mammals of the Adirondacks. He says: "The distance that a panther can pass over in a single leap is almost incredible. On level ground, a single spring of twenty feet is by no means uncommon, and on one occasion Mr. Sheppard measured a leap, over snow, of nearly forty feet. In this instance, there were three preliminary springs, and the panther struck his deer on the fourth. The longest leap measured by Mr. Sheppard was one of sixty feet, but here the panther jumped from a ledge of rocks about twenty feet above the level upon which the deer was standing. He struck it with such force as to knock it nearly a rod further off."

In the winter, when snow is so deep as to obstruct the travelling of deer, the great feet of

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PUMA.

the panther spread to such width that his locomotion is much the same as that of a man on snow-shoes.

It is observed that most mammals are larger in the north than in the southern parts of the country. The reverse is true of the Panther.

Fine specimens of the Puma are kept at the Zoological collection in Central Park. Several litters of young have been raised there. Usually, however, the kittens die before they are many weeks old.

Mr. Conklin, Director of the Central Park Menagerie, informed us that one of the Pumas in his collection has produced young seven times in confinement, having from two to four kittens at a birth. Her present age is sixteen years. The period of gestation is thirteen weeks. Though this is the largest of our northern carnivores, it is seldom seen, excepting by hunters who penetrate the wilderness; yet nearly an hundred examples have been killed since 1860 in the Adirondacks.

Audubon says of him, as seen in the semi-tropical regions of Florida and Texas: "He is sometimes found on the open prairies, and his tracks may be seen on almost every cattle-crossing place on the sluggish bayous and creeks with their treacherous quicksands. At such places the Cougar sometimes finds an unfortunate calf, or, perhaps, a cow or bullock, that has become fast in the miry earth, and, from exhaustion, has given up its strugglings and been drowned, or suffocated. Such a case happened, when the specimen he figures was shot in the act of dragging the heifer from the mud. For the size, the Puma has extraordinary strength. The Cougar is ordinarily, however, compelled to hunt up smaller animals, as the prey is not always at hand."

Audubon adds his personal testimony to others in favor of the alleged cowardice, or, rather, want of prowess. He says: "On our way to school, as a boy, a Cougar crossed our path, not ten yards in front of us. When the animal saw us, it commenced a hurried retreat. A small terrier that accompanied us gave chase to the animal, which, after running about an hundred yards, mounted an oak and rested upon one of its limbs, about twenty feet from the ground. We approached and gave a loud whoop, when it dropped upon the ground and soon made its escape.

"Among the mountains of the head waters of the Juniata, the Puma is hunted systematically with a kind of half-breed dogs, the full bloods lacking the courage to attack such a large animal. The tales related of the cry of this animal resembling the human voice are not true; their cry is like that of the common cat—much louder, naturally."

In 1865, we saw the tracks of a Puma on the sands of the Florida Reef. On Plantation Key we traced these tracks to a cabin where a wrecker or fisherman lived. During the previous night the man had lost a valuable brace of puppies, and not being familiar with this cat, he was in great doubt and terror. The tracks were four inches by four and a half in extent, and impressed our lonely wrecker with wonderful sentiments of the powers of such a beast. On crossing to Metacombe Key, a half-mile eastward, separated by a deep channel, we found the same kind of tracks, beginning at the high-water mark and continuing along the beach until they reached another cabin. Here the fisherman's hog had lost an ear; the Puma, which proved to be the invader, had not been able to get at the hog, and was obliged to be satisfied with what was in reach. Our party planned a still hunt for that night, judging wisely, that the Puma would not forget to come back for the remainder of the hog. The Puma came, and met the usual greeting from extended arms.

The Puma is not the only example of a pardine animal which is destitute of the usual pardine spots and stripes.

The YAGOUARONDI possesses a fur of a nearly uniform color, without either spots or streaks. Its color is rather a variable brown, sometimes charged with a deep black tinge, and sometimes dashed with a slight freckling of white. When the animal is angry, the white grizzly tinge becomes more conspicuous than when its temper is undisturbed. The reason for this curious change of hue is, that each hair is alternately dark and white, the tips being all black. If, therefore, the Yagouarondi is in a placid humor, its fur lies closely to the body, and only

presents its black surface to the eye. But if it is excited, and sets up its fur after the manner of an angry cat, the white markings of the hair immediately become visible. It is said to be a very savage animal when wild.

YAGOUARONDI.—*Leopardus yagouaroudi.*

The Yagouarondi, like the puma, of one uniform color, forms with the latter a group quite unique, nearly all other cats having very distinctive markings. It is found as far north as Matamoras. Its size is that of a domestic cat, but the length of body and tail reminds one of the civet forms.

It is a native of Guiana, and several specimens have been brought to this country.

MARBLED CAT.—*Leopardus marmoratus.*

The Marbled Cat partakes more of the proverbial pardine spotted character than either of the two preceding animals, and although not so finely marked as the beautiful Ocelots, or Tiger Cats, possesses a fur prettily diversified with dark spots upon a light ground. The ground of the fur is generally of a grayish tawny, on which are scattered many spots, not so sharply defined as those of the leopard, or the Tiger Cats. It is an inhabitant of Malacca.

MANY of the members of the large genus Leopardus, are classed together under the title of Ocelots, or, more popularly, of Tiger Cats. They are all most beautiful animals, their fur being diversified with the brilliant contrasts of a dark spot, streak, or dash upon a lighter ground, and their actions filled with easy grace and elegance.

The common OCELOT is a native of the tropical regions of America, where it is found in some profusion. In length it rather exceeds four feet, of which the tail occupies a considerable portion. Its height averages eighteen inches. The ground color of the fur is a very light grayish-fawn, on which are drawn partially broken bands of a very deep fawn-color, edged with black, running along the line of the body. The band that extends along the spine is unbroken. On the head, neck, and the inside of the limbs, the bands are broken up into spots and dashes, which are entirely black, the fawn tint in their centre being totally merged in the deeper hue; the ears are black, with the exception of a conspicuous white spot upon the back

OCELOT.—*Leopardus pardalis.*

and near the base of each ear. Owing to the beauty of the fur, the Ocelot skin is in great request for home use and exportation, and is extensively employed in the manufacture of various fancy articles of dress or luxury.

In its habits the Ocelot is quick, active, and powerful, proving itself at all points a true leopard, although but in miniature.

It is sufficiently fierce in its wild state to be a dangerous opponent if wounded or otherwise irritated. When in captivity, its temper seems rather capricious, depending, in all probability, on the individuality of the animal, or the treatment of its keepers. Some of these creatures are always fierce and surly, setting up a savage growl when any one approaches their cage, spitting at the visitor like an angry cat, and striking sharp, quick blows with the paws. Others, again, are as quiet and well-behaved as the generality of domestic cats, like to be noticed, and, if they think that the visitor is about to pass by their cage without recognizing them, call his attention by a gracious purr, and rubbing themselves against the bars. They will even offer themselves to be stroked and patted, and will bow their heads, just as a cat does on feeling the touch of a friendly hand.

The Gray Ocelot is so called on account of the comparatively light hue of the fur. The spots are not quite so numerous nor so bold as in the preceding animal, and the throat is remarkable for its whitish-gray tint, unbroken by spots or streaks. All these creatures are found in tropical America.

The Ocelot soon learns to distinguish friends from foes, and can easily be brought to a state of partial tameness.

Several of these animals, when I first made their acquaintance, were rather crabbed in disposition, snarled at the sound of a strange step, growled angrily at my approach, and behaved altogether in a very unsocial manner, in spite of many amicable overtures. After awhile, I saw that these creatures were continully and vainly attempting the capture of certain flies which buzzed about the cage. So I captured a few large blue-bottle flies, and poked them through a small aperture in the cage, so that the Ocelot's paw might not be able to reach my hand. At first, the Ocelots declined to make any advances in return for the gift, but they soon became bolder, and at last freely took the flies as fast as they were caught. The ice was now broken, and in a very short time we were excellent friends, the angry snarl being exchanged for a complacent purr, and the suspicious shrinking movements for a quiet and composed demeanor.

The climax to their change of character was reached by giving them a few leaves of grass, for which they were, as I thought they would be, more anxious than for the flies. They tore the green blades out of my hand, and retired to their sleeping-house for the purpose of eating the unaccustomed dainty undisturbed. After this they were quite at their ease, and came to the front of the cage whenever I passed.

Every one who has watched the habits of the domestic cat must have noticed how thankful she seems for a few leaves of grass. It is curious that a carnivorous animal should be so impelled by instinct as to turn for a time to vegetable food, and to become, for the nonce, a herbivorous creature. Dogs, it is well known, will resort to the same plant, and appear to use it in a medicinal point of view.

The eye of the Ocelot is a pale yellowish brown, and tolerably full, with the linear pupil that is found in the smaller felidæ.

There are several species of these pretty and agile animals, among which the most conspicuous are the Common, the Gray, and Painted Ocelots, and the Margay, or Marjay, as it is sometimes called. The habits of these animals are very similar.

In its native woods, the Ocelot seeks its food, chiefly among the smaller mammalia and birds, although it is sufficiently powerful to attack and destroy a moderately sized monkey. The monkeys it can chase into the tree branches, being nearly as expert a climber as themselves, but, as it cannot follow the birds into their airy region, it is forced to match its cunning against their wings. As is often done by the domestic cat, the Ocelot can spring among a flock of birds as they rise from the ground, and, leaping into the air, strike down one of them with its rapid paw. But its chief method of obtaining birds is by concealing itself among the branches of a tree, and suddenly knocking them over as they come and settle unsuspiciously within reach of the hidden foe.

The Painted Ocelot resembles the preceding animal in the general aspect of its fur, but is marked in a richer manner.

The spots are more numerous, closer together, and more uniform than those of the common Ocelot. The black markings of the tail are of a very deep hue indeed, and occupy a large portion of that member. The throat is grayish white, with one or two very bold black streaks drawn upon it, extending towards the shoulders. These streaks are branch-like in form, and are very clearly defined. The spots that run along the spine are solid, and of a deep velvety black.

When in captivity, the Ocelot seems to prefer birds and rabbits, or similar creatures, to any other food, and is able to strip the feathers from the bird before it begins its meal. The head appears to be its favorite morsel, and, with the head, the Ocelot generally commences its meal. The reader may remember that the Jaguar, mentioned on page 144, had decapitated

the fowls which it had snatched from the steward, and had eaten their heads before they could be reclaimed.

Ocelots have been kept in the Zoological Gardens at Central Park, and always attract by their exceeding beauty of markings. They resisted all attempts at familiarity, and seemed not amenable to domestication; though perhaps a longer term of confinement might prove them otherwise.

The Eyra Cat (*Felis eyra*) is enumerated as a North American animal, being common in the region near the Rio Grande of Texas.

The Margay is a very handsome example of the Tiger Cats. The tail is rather more bushy towards the tip than those of the preceding animals, and the spottings are hardly so

MARGAY.—*Leopardus tigrinus.*

apt to run into hollow streaks or links. It will be observed that the spots are small and numerous towards the hind quarters.

It is, when caught young and properly treated, a very docile and affectionate animal, although it has been slanderously described as a wholly untamable and ferocious beast. Mr. Waterton mentions, in one of his essays on natural history, that when he was in Guiana he possessed a Margay which had been captured by a negro while still a kitten. It was nurtured with great care, and became so fond of its master that it would follow him about like a dog. Against the rats which inhabited the house, this Margay waged incessant war, creeping about the staircase in search of the destructive rodents, and pouncing with unerring aim on any rat that was unfortunate enough to make its appearance from out of its hiding-place behind the casements.

With an instinctive knowledge of rats and their habits, the Margay was accustomed to choose the closing hours of day as its best hunting time. The creature's assistance in rat-killing was most useful, for, during the owner's absence, the rats had gained entrance to his house, and, finding no one there to oppose their devices, took possession, and roamed about the rooms at their own will. Thirty-two doors had been gnawed through by the chisel-edged teeth of the rats, and many of the valuable window-frames had suffered irreparable damage from these long-tailed pests.

The very handsome animal which is known by the name of Rimau-dahan, or more popularly as the Clouded or Tortoise-shell Tiger, was, until comparatively late years, a

stranger to this country. One of the first specimens was exhibited for some time in a travelling menagerie, where it died. So indifferent or so ignorant were its proprietors, that after its death no trace was found of this unique animal, excepting a tradition that its hide had been cut up for the purpose of making caps for the keepers.

The spots and marks which cover the fur of the Rimau-dahan are so very irregular in shape and arrangement that a detailed description is almost impossible. Some of the patches are nearly oval, some are angular, some are particularly open, while others are enclosed within a well-defined dark edging. There are stripes like those of the tiger, solid spots like those of the leopard, hollow spots resembling those of the jaguar, and large black-edged spots like those of the ocelots. The black has a peculiarly rich and velvety appearance.

RIMAU-DAHAN.—*Leopardus macrocelus.*

The ground color of the fur is gray, tinged with brown, and however the other markings may vary, there are always two bold uninterrupted bands of velvety-black running along the entire length of the animal, beginning at the back of the head, and only ending at the root of the tail. The tail itself is covered with dark rings, which contrast well with the very light ground of the fur. The hair is rather long, and beautifully fine in its texture. Altogether, the Rimau-dahan, although so large an animal, bears a close resemblance to the Marbled Cat, which has already been mentioned.

An allied species, named popularly the TORTOISE-SHELL or SMALLER CLOUDED TIGER, and scientifically termed *Leopardus macroceloides*, is found in the same locality as the Rimau-dahan. It possesses many of the properties which belong to its larger relative, and is equally fond of climbing up, or resting on, the branches of trees.

ALTHOUGH so gentle in its demeanor when domesticated as to have earned for itself the name of "*mitis*," or "placid," the Chati is, when wild, a sufficiently destructive animal. It is not quite so large as the ocelots, with which creatures it is a compatriot.

The color of the Chati resembles that of the Leopard, only is paler in general hue. The dark patches that diversify the body are very irregular—those which run along the back are solid, and of a deep black, while those which are placed along the sides have generally a deep fawn-colored centre. Towards the extremity of the tail, the spots change into partial rings, which nearly, but not quite, surround the tail. All specimens, however, are not precisely alike, either in the color or the arrangement of the markings, but those leading characteristics which have just been mentioned may be found in almost every individual.

CHATI.—*Leopardus mitis.*

When at large in its native woods, it wages incessant and destructive warfare against small quadrupeds and birds, the latter creatures being its favorite prey. The Chati is a vexatious and expensive neighbor to any one who may keep fowls, for it seems to like nothing so well as a plump fowl, and is unceasing in its visits to the hen-roost. It is so active and lithe an animal that it can climb over any palisade, and insinuate itself through a surprisingly small aperture; and it is so wary and cautious in its nocturnal raids, that it generally gives no indication of its movements except that which is left next morning by the vacant perches, and a few scattered feathers flecked with blood-spots.

PAMPAS CAT.—*Leopardus pajeros.*

From the shorter heads, and other characteristics of the last few animals, it will be seen that we are rapidly approaching that type of the feline nature with which we are so familiar in the domestic cat. The Pampas Cat might easily be mistaken for a rather large domestic cat which had run at large for some time, and assumed the fierce, suspicious demeanor of the wild animal.

Its general color is a yellowish gray, something like the tint which we call "sandy," when it belongs to the fur of a domestic cat or the scalp of a human being. The body is covered with numerous brown stripes, admixed with yellow, which run at a very small angle with the line of the body. On each side of the face two bold streaks are drawn from the eye over the cheeks, the lower stripe running round the neck, and uniting with the corresponding stripe of the opposite side. Two or three dark streaks appear across the upper portion of the legs. The depth of tint appears to be variable in different individuals, and the markings present slight discrepancies.

The fur of the Pampas Cat is extremely long, some of the hairs reaching a length of five inches. The tail is not very long, is well covered with bushy hair, and is devoid of the ring-like markings which are found in the same member in the Ocelots.

EGYPTIAN CAT.—*Felis maniculata.*

The natives of Buenos Ayres and its vicinity name the Pampas Cat "Gato Pajero," the former word signifying a cat, and the latter being formed from the Spanish term "paja," or straw. It is so called because it frequents the jungles or reeds, and by the English residents is oftened termed the Jungle Cat. It is spread over a very large space of country, being found on the whole of the Pampas which are spread on the eastern side of South America, a range of some fourteen hundred miles. The food of the Pampas Cat consists chiefly of the moderately sized rodents which inhabit the same country in great profusion, and it is by no means so dangerous a foe to poultry as the Ocelots or the Chati.

The length of the animal, inclusive of the tail, is rather more than three feet, the tail occupying about eleven inches. Its height, when adult, is rather more than a foot.

It is about the size of a large house cat, having a tail very short, and bush-like at the extremity. In this latter feature the next group of cats, embracing the Lynx, is suggested.

Excepting for a certain upright and watchful carriage of the ears, the Egyptian Cat has a very domestic look about it.

This animal is supposed to be the species which was so honored by the ancient Egyptians, that they refused to attack an invading army which bore a number of Cats in their front rank;

and even when their land was in possession of the hostile force, the people rose like one man, and demanded the life of a soldier who had killed one of these sacred animals. So deeply were these ideas implanted in their minds, and so determinately did they persist in their demand, that the invading general yielded to their religious enthusiasm, and actually delivered the unwitting offender into their hands.

The Egyptian Cat was not only honored and protected during its lifetime, but even after death it received funeral honors such as only fall to the lot of distinguished or wealthy personages.

There were several methods of embalming in use among the Egyptians, by which the bodies of the dead were, for a time, withheld from the natural and beneficial process of decay, only to yield to its power a few hundred years later. Of these modes, only the most elaborate has left its records on the still existing bodies of the mighty dead. The carcass of the plebeian might be drenched and soaked in the antiseptic mixture, and so be preserved for a time. But it was the privilege for kings and rulers alone to have their bodies imbued with costly drugs and sweet spices, and to lie unchanged in their tombs for thousands of years, until their mummied remains were removed from their long repose, and exhibited to the public gaze of a people who, in their own royal time, were but a race of naked savages. The privilege which was denied to the workman was granted to his Cat, and we have in this country many specimens of mummied Cats, their bodies swathed, bandaged, and spiced in the most careful manner, partaking of this temporary immortality with a Rameses or a Pharaoh.

The species of Cat which was thus glorified by these ghastly honors of the charnel-house, is the animal which is represented in the engraving. It is supposed to be the original stock from which descended the race of domestic Cats which found their home by the Egyptian's hearth, and were so piously cherished by that strange, intellectual, inexplicable people. It is indigenous to Nubia, and has been found on the western side of the Nile, inhabiting a district which was well furnished with brushwood, and broken up into rocky ground.

The general color of this animal is something like that of the Pampas Cat, but not so clear or bright, as a brownish-gray tint is washed over the white portions. On the back, the color is deeper than on the remainder of the body. The under portions of the body and inside of the limbs are a grayish-white, the gray disappearing under the throat and about the cheeks, leaving those parts of a pure white. Many streaks and dashes of black, or ochry-yellow, are spread over the body and limbs, two of the lighter stripes encircling the neck. Its eye is bright golden yellow.

The Egyptian Cat is about the size of an ordinary domestic cat, being nine or ten inches in height, and two feet five inches in length; the tail is about nine inches long.

FEW of the Felidæ are so widely spread, or so generally known as the WILD CAT. It is found not only in this country, but over nearly the whole of Europe, and has been seen in Northern Asia, and Nepaul.

It is true that many so-called Wild Cats are found in the snares set by the gamekeeper to protect the pheasants, hares, and partridges under his charge, but in ninety-nine cases out of every hundred, these captured robbers are nothing more than domesticated cats which have shaken off the trammels of their civilization, and have taken to a savage life in the bush. Even tame and petted Cats have been known to take to poaching, and to bring to their owner a daily pheasant or partridge. There are few more dangerous foes to game than the domestic Cat, and the Wild Cat gets the credit of its misdeeds.

Whether the Wild Cat be the original progenitor of our domestic Cat is still a mooted point, and likely to remain so, for there is no small difficulty in bringing proofs to bear on such a subject. It is certain that if such be the case, the change from savage to domestic life must be of very long standing, for it is proved that certain distinctions between the Wild and domestic Cat are found in full force, even though the domestic Cat may have taken to a wild life for many a year. There are several points of distinction between the Wild and the domestic Cat; one of the most decided differences being found in the shape and comparative length of their tails.

The tails of the two animals are easily distinguished from each other. The tail of the domestic Cat is long, slender, and tapering, while the tail of the Wild Cat is much shorter and more bushy. Now it is proved that, even if several domestic Cats have escaped into the woods and there led a sylvan life, their long tapering tails have been transmitted to their posterity through many successive generations, in spite of their wild and marauding habits.

The color of the Wild Cat is more uniform than that of the domestic animal, and is briefly as follows.

The ground tint of the fur is a yellowish, or sandy gray, diversified with dark streaks drawn over the body and limbs in a very tigrine manner. These stripes run, as do those of the tiger, nearly at right angles with the line of the body and limbs. A very dark chain of streaks and spots runs along the spine, and the tail is thick, short, and bushy, with a black tip, and many rings of a very dark hue. The stripes along the ribs and on the legs are not so

WILD CAT.—*Felis catus*

dark nor so clearly defined as those of the spine. The tail is barely half the length of the head and body. The fur is tolerably long and thick, and when the animal is found in colder regions, such as some parts of Germany and Russia, the fur is peculiarly long and thick.

In the wilder and less cultivated parts of Scotland, the Wild Cat is still found, and is as dangerous an enemy to the game of Scotland as is the Ocelet to that of tropical America.

The amount of havoc which is occasioned by these creatures is surprising. Mr. Thompson mentions that a gamekeeper had frequently noticed certain grouse feathers and other *débris* lying about a "water-break" which lay in his beat, and had more than once come upon some of the birds lying without their heads, but otherwise in such excellent condition that they were taken home and served at table. Suspecting the Wild Cat to be the culprit, he set a trap, and captured two of these animals, an old and a young one.

Here, again, is exhibited the strange predilection which the Cat tribe seem to feel for the heads of the creatures on which they feed. No less than five grouse were discovered at the same time lying headless on the ground, and it is probable that their destroyers would have contented themselves with the heads only; and, like the blood-sucking Tiger, would have killed victim after victim for the sole purpose of feasting upon their heads. The keeper expected to secure one or two more of these feline marauders, for the young Wild Cats remain

with their parents until they are full grown and able to take upon themselves the cares of wedded life.

In Maxwell's "Wild Sports of the West" are several anecdotes of a fierce savage breed of Cats running wild, and depopulating the rabbit-warrens sadly. One of these animals, which was killed after a severe battle, was of a dirty-gray color, double the size of the common house Cat, and its teeth and claws more than proportionately larger. This specimen was a female, which had been traced to a burrow under a rock, and caught in a rabbit-net. With her powerful teeth and claws she tore her way through the net, but was gallantly seized by the lad who set the toils. Upon him she turned her energies, and bit and scratched in a most savage style until she was despatched by a blow from a spade. The wounds which she inflicted were of so severe a character that lock-jaw was threatened, and the sufferer was sent to an hospital.

Besides these huge Wild Cats, which may, in all probability, be the true *Felis catus*, there are many house Cats which run away from their rightful home, and, taking up their residence in the rabbit-warren, are as formidable enemies to rabbits and poultry as those of the larger kind. No less than five males were caught at one time in an outhouse, penned up until the morning, and then shot; after which execution the neighboring warren largely increased its population.

The Wild Cat takes up its residence in rocky and wooded country, making its home in the cleft of a rock or the hollow of some aged tree, and issuing from thence upon its marauding excursions. It has even been known to make its domicile in the nest of some large bird. It is rather a prolific animal, and, were it not kept within due bounds by such potent enemies as the gun and the snare, would rapidly increase in numbers. As it is, however, the Wild Cat yields to these foes, and slowly, but surely, vanishes from the land. The number of its family is from three to five, or even six. The female is smaller than the male.

In total length, an adult male Wild Cat is about three feet, of which the tail occupies nearly a foot. This does not seem to be a very considerable length, as there are domestic Cats which equal or even exceed these dimensions; but it must be remembered that the tail of the Wild Cat is much shorter than that of the domestic animal.

Of the fiery energy which actuates this animal when attacked and roused to fury, the following extract from St. John's "Highland Sports" will give an excellent idea:

"The true Wild Cat is gradually becoming extirpated, owing to the increasing preservation of game; and, though difficult to hold in a trap, in consequence of its great strength and agility, he is by no means difficult to deceive, taking any bait readily, and not seeming to be as cautious in avoiding danger as many other kinds of vermin. Inhabiting the most lonely and inaccessible ranges of rock and mountain, the Wild Cat is seldom seen during the daytime; at night, like its domestic relative, he prowls far and wide, walking with the same deliberate step, making the same regular and even track, and hunting its game in the same tiger-like manner; and yet the difference between the two animals is perfectly clear and visible to the commonest observer. The Wild Cat has a shorter and more bushy tail, stands higher on her legs in proportion to her size, and has a rounder and coarser look about the head."

Although so scarce in these days of allotments and railways, the Wild Cat was once so common in England as to be an absolute pest, and was formerly numbered among the beasts of chase that contributed to the amusement of the dull unlearned leisure which fell to the lot of those olden aristocrats of our land whose only excitement was found in the act of destruction, either of men or beasts. As were almost all destructive beasts, it was protected by the great few who suffered no scath by its depredations, to the loss of the many small, whose little stock of poultry paid heavy toll to the licensed marauders. Even its fur was made a subject of legal enactment, being permitted to some orders of the people and forbidden to others.

When engaged in the study of an illustrated work on ethnology, with its portraits of the various forms which are assumed by the human race, a certain feeling of relief and repose

takes possession of the mind when the reader turns from the savage races of mankind, with their selfish, restless, eager, bestialized expression, to the mild and intellectual countenances of the civilized nations. A similar sensation of repose is felt when we turn from the savage, hungry-looking Wild Cat to the placid face and tranquil expression of our favorite, the DOMESTIC CAT.

Although England possesses an indigenous Cat, which would naturally be considered as the original progenitor of the Domestic Cat, which attaches herself so strongly to mankind, it is now generally admitted that for this useful and graceful animal we are indebted to another continent. In the description of the Wild Cat, it has been mentioned that the distinguishing marks which characterize the two species are so permanent as to defy eradication, and to mark decisively the "Felis catus" from the "Felis domestica." The comparative

DOMESTIC CAT.—*Felis manicula domestica.*

length of their tails is of itself a distinction, and one which seems never to be lost by either the wild or the domestic animal. Whether those two creatures have ever produced a mixed breed is a matter of much uncertainty, for although a wood or a warren may be infested with Cats living in a wild state, yet, in almost every case, they are only Domestic Cats in which the savage part of their nature has predominated, and conquered the assumed habits of domestication. They have acted as men sometimes act under similar temptation, and have voluntarily taken to a savage life. As far as is at present known, the Egyptian Cat is the origin of our Domestic Cat.

In the long past times, when the Egyptian nation was at the head of the civilized world, the "*Felis maniculata*" was universally domesticated in their homes, while at the comparatively later days of English history the Domestic Cat was so scarce in England that royal edicts were issued for its preservation. Yet in those days, A. D. 948, the wild Cat was rife throughout Europe, and was reckoned as a noxious animal, which must be destroyed, and not a useful one which must be protected. It is conjectured that the Domestic Cat was imported from Egypt into Greece and Rome, and from thence to England.

In the eyes of any one who has really examined, and can support the character of the Domestic Cat, she must appear to be a sadly calumniated creature.

She is generally contrasted with the dog, much to her disfavor. His docility, affectionate disposition, and forgiveness of injuries; his reliability of character, and his wonderful intellectual powers are spoken of, as truly they deserve, with great enthusiasm and respect. But these amiable traits of character are brought into violent contrast with sundry ill-conditioned qualities which are attributed to the Cat, and wrongly so. The Cat is held up to reprobation as a selfish animal, seeking her own comfort and disregardful of others; attached only to localities, and bearing no real affection for her owners. She is said to be sly and treacherous, hiding her talons in her velvety paws as long as she is in a good temper, but ready to use them upon her best friends if she is crossed in her humors.

Whatever may have been the experience of those who gave so slanderous a character to the Cat, my own rather wide acquaintance with this animal has led me to very different conclusions. The Cats with which I have been most familiar have been as docile, tractable, and good-tempered as any dog could be, and displayed an amount of intellectual power which would be equalled by very few dogs, and surpassed by none.

With regard to the comparatively good and bad temper of the Cat and dog, there is as much to be said in favor of the former as of the latter animal, while, as to their mental capacities, the scale certainly does not preponderate so decidedly on the side of the dog as is generally imagined. Nor is my own experience a solitary one, for in almost every instance where my friends have possessed favorite Cats the result has been the same.

MANX CAT. ANGOLA CAT.

THERE are many varieties of the Domestic Cat, of which the most conspicuous are the MANX CAT and the ANGOLA. In the accompanying engraving, the upper figure represents the former animal, and the lower the latter. These two Cats present the strongest contrast to each other that can be imagined, the Angola Cat being gorgeous in its superb clothing of long silky hair and bushy tail, and the Manx Cat being covered with close-set fur, and possessing hardly a vestige of a tail.

A fine Angola Cat is as handsome an animal as can be imagined, and seems quite conscious of its own magnificence. It is a very dignified animal, and moves about with a grave solemnity that bears a great resemblance to the stately march of a full-plumed peacock conscious of admiring spectators. It is one of the largest of domestic Cats, and in its own superb manner will consume a considerable amount of food. One of these animals, nearly the finest that I ever saw, made friends with me in a *café* at Paris, and used to sit on the table and eat my biscuits. In order to test the creature's appetite, I once ordered two successive plates of almond biscuits, every crumb of which "Minette" consumed with a deliberate and refined air, and would probably have eaten as much more if it had been offered to her. It must be considered, that she had plenty of friends who visited the same *café*, and that she was

quietly levying contributions during the whole day and a considerable portion of the night, so that these two plates of biscuits were only taken in the usual course of events.

The Manx Cat is a curious variety, on account of the entire absence of tail, the place of which member is only indicated by a rather wide protuberance. This want of the usual caudal appendage is most conspicuous when the animal, after the manner of domestic Cats, clambers on the tops of houses, and walks along the parapets. How this singular variation of form came to be perpetuated is extremely doubtful, and at present is an enigma to which a correct answer has yet to be given. It is by no means a pretty animal, for it has an unpleasant weird-like aspect about it, and by reason of its tailless condition is wanting in that undulating grace of movement which is so fascinating in the feline race. A black Manx Cat with its glaring eyes and its stump of a tail, is a most unearthly looking beast, which might fitly be the quadrupedal form in which the ancient sorcerers were wont to clothe themselves on their nocturnal excursions.

The prescience with which all animals seem to be in some measure gifted, has often excited the admiration of those who have witnessed its effects. The Cat appears to possess an extremely large share of this gift, as has been frequently shown. An instance of this previsional capacity occurred in England, in 1853. A long account of this occurrence has been kindly sent to me, authenticated by the names of the various persons concerned in the matter, as well as by that of the writer.

A family resided for some time on the southern side of the Cuddie Bridge, and had in their house a favorite Cat. The family changed their residence, and took a house on the opposite side of Eddlestone Water, leaving behind them the Cat, which refused to stir from her accustomed haunts. Pussy, however, took a dislike to the new inhabitants of the house, and finding her way across the bowling-green, entered into possession of the mill, where she doubtless found plenty of game. Here she remained for some eighteen months in spite of several attempts made by her former owner to recover his lost favorite. Several times she had been captured and brought to his house, and on one occasion a kitten was retained as a hostage. But every endeavor was vain, and leaving her offspring in the hand of her detainers, and resisting all temptations, she set off again for her quarters at the mill; in her eagerness to get back to the mill even fording the river, "taking Cuddie at the broadside," as that action is popularly termed.

On the 18th of October, 1853, at ten o'clock in the evening, as the former owner of the Cat was standing by the church porch, his attention was caught by the fugitive Cat, which was purring and rubbing herself against his legs as affectionately as in the olden times. He took the Cat in his arms, and when he attempted to put her down, she clung tightly to his breast, and gave him to understand in her own feline language that she was going home with him. Six hours after this return of the wanderer the mill was discovered to be on fire, and in a short time was reduced to a heap of blackened and smouldering ruins.

Since that time the Cat has remained complacently with her former companions at Biggiesknowe, in spite of the ancient adage, which says that, "in Biggiesknowe, there is neither a bannock (*i.e.* oatmeal cake) to borrow nor lend." Reference will be made to this mill in a future portion of this work.

An objection may be made to the term "prescience" in this case, on the grounds that the fire might possibly have been smouldering when the Cat left the mill, and that the creature might have taken the alarm from seeing the fire in existence, and not from a prospective intimation of the future conflagration. But even supposing that this conjecture were true, it must be remembered that Cats are remarkable for their strong attachment to a fire, and that this animal would rather be attracted than alarmed by the grateful warmth of the burning wood. Moreover, from the time when the Cat found her former master to that when the fire was discovered, six hours had passed, and we may reasonably conclude that the animal had left the mill for some little time before renewing her broken acquaintance. It would be hardly probable that if the fire had been sufficiently powerful to make the Cat decamp from her residence, so many hours would have elapsed before the flames manifested themselves.

Among other differences between the habits of wild and domesticated animals, the effect which fire has upon them is very remarkable. We all know how the domestic Cat is always found near the fire, perched on the hearth-rug, or sometimes sitting inside the fender, to the

imminent danger of her fur and whiskers. Yet there is nothing which so utterly terrifies the wild felidæ as the blaze of a glowing fire. Surrounded by a fiery circle the traveller sleeps secure, the waving flames being a stronger barrier between himself and the fierce hungry beasts than would be afforded by stone or wood of ten times the height.

RETURNING once more to the savage tribe of animals, we come to a small, but clearly-marked group of Cats, which are distinguishable from their feline relations by the sharply pointed erect ears, decorated with a tuft of hair of varying dimensions. These animals are popularly known by the title of Lynxes. In all the species the tail is rather short, and in some, such as the Peeshoo, or Canada Lynx, it is extremely abbreviated.

The CHAUS, our first example of the Lyncine group, is not unlike the lion in the general tawny hue of its fur, but is extremely variable both in the depth of tint and in certain indistinct markings which prevail upon the body, limbs, and tail. The fur, however, is always more grizzled than that of the lion, and there seem to be in almost every individual certain faint stripes upon the legs and tail, together with a few obscure stripes or dashes of a darker color upon the body.

THE CHAUS.—*Chaus lybicus.*

Along the back, the hue is deeper than on the sides, and on the under parts of the body the fur is of a very pale tint. The extremity of the tail is black. The markings which are found on this animal are caused by the black extremities of some of the hairs. When these black-tipped hairs are scattered, they produce the grizzly aspect which has been mentioned as belonging to this animal, but when they occur in close proximity to each other, they produce either spots, streaks, or dashes, according to their number and arrangement. On the tail, however, they always seem to gather into rings, and on the legs into stripes. The cheeks are white, and below each eye is generally a white spot. There is an under coating of soft woolly hair, which is set next to the skin, and through this woolly coating the larger hairs protrude. It is this double set of hair which gives to the fur of the Chaus its rough fullness.

The Chaus, although it has been distinguished by the specific title *Lybicus*, is an Asiatic as well as an African animal, inhabiting the south of Africa, the shores of the Caspian Sea, Persia, and many parts of India. The localities where this creature is known to frequent are generally those spots where it finds marshy, boggy ground, and plenty of thick brushwood. It does not appear to care for wooded districts, where trees grow, for it is but a poor climber, and seeks its prey only on the ground. Its food consists chiefly of the smaller quadrupeds and birds, and it is also fond of fish, which it captures in the shallow waters by watching quietly for their approach, and then adroitly scooping them from their native element by a quick sweep of its paw. River banks, especially those where the vegetation grows dense and low, are favorite resorts of the Chaus, which can in those favored localities find its two chief requisites:—a place of concealment, from whence to pounce upon any devoted bird or quadruped that may chance to come within reach of the deadly spring, and a convenient fishing place wherein to indulge its piscatorial propensities.

ANOTHER species of the genus Chaus, is the animal which is generally known by the name of the Caffre Cat, but which properly belongs to the Lyncine group. In color it is rather variable, some individuals being much paler than others, the general tint of the fur being a

gray, here and there grizzled with black, and diversified with dark brindlings. On the legs the stripes become bolder and better defined. When young, the fur is paler than when the animal has attained its full growth. In size it rather surpasses a large domestic cat. As may be inferred from its name, it is an inhabitant of Southern Africa, being found at the Cape, and in those lands which are inhabited by the various native tribes which are popularly termed Caffres or Kaffirs.

Among the Lynxes, few species are better known, at all events by name, than the common Caracal.

This animal is easily distinguishable from the other members of the Lyncine group by its very black ears. The name Caracal is given to the animal on account of this peculiarity, the word being a Turkish one, and literally signifying Black-eared. The Greek word *melanotis* bears a similar signification. The Persians have seized upon the same characteristic mark, and have termed the creature "Siagosh," which word bears an exactly similar import to the term Caracal. The color of this creature is a pale brown, warmed with a tinge of red, varying slightly in different individuals. The under parts of the body are paler than the upper, and slightly besprinkled with spots. The color of these spots is very variable, for in some individuals, they are nearly black, while in others they are a reddish-chestnut. The lower lip, the tip of the upper lip, and the chin are quite white. The tail is very short. It is not a very large animal, being about equal to a rather large bull-terrier dog in size, and very much more active.

It is a peculiarly ferocious and surly animal, wearing a perpetual expression of malevolence, and always appearing to be, as it truly is, ready for a snarl and a bite.

In captivity it appears to be less pervious to the gentle power of kindness than almost any other feline animal, and very rarely can be induced to lay aside a suspicious and distrustful demeanor, which characterizes its every movement. Even to its keeper it displays a sullen distrust, and when a stranger approaches its cage it resents the undesired visit as if an intentional insult had been offered, laying back its ears and uttering a malignant hiss and snarl, its eyes glaring with impotent rage. Although this repulsive demeanor has generally characterized the captive Caracal, there may be individuals of a very different disposition, ready to meet the advances of their keepers, if the keepers be endowed with a nature which is capable of drawing out the better feelings of the animals under their charge. More rests with the attendants upon captive animals than is supposed, and there is many a wild beast, such as the hyena, the wolf, or the jaguar, which has been stigmatized as untamable, simply because its keeper did not know how to tame it. Therefore it may be that the Caracal, among other animals, is only waiting for the right man to appear, and that then it will become as docile as a dog under his firm, but gentle treatment.

There is one most valuable rule, learned by long experience among wild beasts, which ought to be engraven on the heart of any one who has to deal with these animals. Never cross the creature's disposition if there be any mode of avoiding it, but if it be necessary to do so, never yield on any pretext whatever. The animal ought to think that the will of its master is absolute, and that opposition is impossible. If the man should once yield to the beast he will have forfeited the entire prestige of his position, and will have lost an amount of influence which it will be almost impossible to recover.

The Caracal is essentially predaceous, feeding upon the various animals which fall victims to its active and muscular limbs. It is said to be able to destroy the smaller deer, and to display very great craft in the chase of the swifter quadrupeds and of birds. It is not particularly fleet of foot, nor, as far as is known, delicate of scent, so that it cannot fairly run down its prey by open chase like the long-winded wolf, nor follow it up by scent like the slow but sure stoat or weasel. But it is capable of making the most surprising springs, and of leaping on its prey with a marvellous accuracy of aim. It can also climb trees, and can chase its prey among the branches on which the doomed creatures had taken up their abode.

Like the hyena, wolf, jackal, and many other flesh-eating animals, it does not content itself with the creatures which fall by the stroke of its own talons, or the grip of its own teeth, but will follow the lion or leopard in its nocturnal quest after prey, and thankfully partake

of the feast which remains after the monarch of the woods has eaten as much as he can possibly contain. In truth, the lion seems oftentimes to carry out the ludicrously arrogant pretension of certain human rulers, and to proclaim, "I, the King of the Forest, have dined. Let the monarchs of earth take *their* dinner!" As is usual among quadrupedal and bipedal royalties, the lion-king has but little chance of making a second repast of any prey which his lordly paw may have immolated, for a band of hungry courtiers assemble round the victim, and after the royal appetite has been satiated, leave nothing but a few dry bones to tell of the animal that ranged freely through the forest but an hour or two ago.

No blame attaches to the black-eared Caracal for this dependent line of conduct, for, as has already been mentioned, the lion himself disdains not to avail himself of a ready killed

THE CARACAL.—*Caracal melanotis.*

prey, and to gorge himself thereon with as much satisfaction as if his own paw had dealt the lethal blow.

It is said that the Caracal will sometimes call in the aid of its fellows, and with their assistance will secure even a large animal. Some authors assert that they will unite, like hounds, in the chase of their prey, and will hunt it as regularly as a pack of wolves or wild dogs. But the general opinion seems to be that the Caracal, even when assisted by its companions, gives no open chase, but achieves its end by a few powerful bounds, a stroke with the paw, and a fierce grip with the fangs on the throat of its victim. Some authors assert that the Caracal is often tamed, and rendered useful in hunting; being trained to creep upon its prey and to spring from its place of concealment upon its unsuspecting quarry. When the trained Caracal seizes its prey it crouches to the earth, and lies motionless until its owner comes up and removes the slaughtered victim.

The strength of this animal is very great in comparison with its size. A captive Caracal has been known to leap upon a large dog and to tear it in pieces, although the dog defended itself to the best of its ability.

The Caracal is spread over a very wide range of country, being known to inhabit large

portions of the Asiatic and African continents. Arabia, the Cape and its vicinity, Egypt, Nubia, and Barbary, are the habitations of this animal, which is also found spread over the greater part of India and Persia. The Arabs call this animal Anak-el-ard.

By name, if not by sight, the common Lynx of Europe is familiar to us, and is known as the type of a quick-sighted animal. The eyes of the Lynx, and the ears of the "Blind Mole," are generally placed on a par with each other, as examples of especial acuteness of either sense.

The European Lynx is spread over a great portion of the Continent of Europe, being found in a range of country which extends from the Pyrenees to Scandinavia. It is also found in the more northern forests of Asia.

The color of this animal is as variable as that of the caracal, or even more so, for the same individual will change the hue of its fur according to the season of the year. During the

EUROPEAN LYNX.—*Lynx virgatus.*

colder months the fur becomes larger, fuller and more grizzled, the latter effect being produced by a change in the tips of the hairs, which assume a grayish-white. The usual color of the Lynx is a rather dark gray, washed with red, on which are placed sundry dark patches, large and few upon the body, and many and small on the limbs. On the body the spots assume an oblong or oval shape, but upon the limbs they are nearly circular. The tail of the Lynx is short, being at the most only seven or eight inches in length, and sometimes extending only six inches. The length of the body and head is about three feet.

This animal resembles the caracal in its habits and mode of obtaining prey. Sheep often fall victims to the Lynx, but it finds its chief nourishment among hares, rabbits, and other small animals. Like the caracal it is an excellent climber of trees, and chases its prey among the branches with ease and success.

The fur of the Lynx is valuable for the purposes to which the feline skin is usually destined, and commands a fair price in the market. Those who hunt the Lynx for the purpose of obtaining its fur, choose the winter months for the time of their operations, as during

the cold season the Lynx possesses a richer and a warmer fur than is found upon it during the warm summer months.

THE SOUTHERN, or PARDINE, LYNX is a peculiarly beautiful example of this group of Felidæ. It inhabits more southern districts than the last-mentioned animals, being found in Spain, Sardinia, Portugal, and other southern countries. From the leopard-like spots with which its ruddy chestnut fur is covered, it derives the name of Pardine Lynx. Its Spanish title is Gato-clavo.

THE New World possesses its examples of the Lyncine group as well as the Old World, and even in the cold regions of Northern America a representative of these animals may be

SOUTHERN LYNX.—*Lynx pardinus.*

found. This is the CANADA LYNX, commonly termed the "Peeshoo" by the French colonists, or even dignified with the title of "Le Chat."

The hair of this animal is longer than that of its southern relatives, and is generally of a dark gray, flecked or besprinkled with black. Large and indistinct patches of the fur are of a sensibly darker tint than the generality of its coat. Most of the hairs are white at their extremities, which will account for the apparent changes in color which will be seen even in the same species at different times. Along the back and upon the elbow joint these dark mottlings become more apparent. In some specimens the fur takes a slight tinge of ruddy chestnut, the limbs are darker than the rest of the body, and the ears are slightly edged with white. It is probable that the same individual undergoes considerable changes, both in the color and the length of its fur, according to the time of year.

The limbs of this Lynx are very powerful, and the thick heavily made feet are furnished with strong white claws that are not seen unless the fur be put aside. It is not a dangerous animal, and, as far as is known, feeds on the smaller quadrupeds, the American hare being its favorite article of diet.

While running at speed it presents a singular appearance, owing to its peculiar mode

of leaping in successive bounds, with its back slightly arched, and all the feet coming to the ground nearly at the same time. It is a good swimmer, being able to cross the water for a distance of two miles or more. Powerful though it be, it is easily killed by a blow on the back, a slight stick being sufficient weapon wherewith to destroy the animal. The flesh of the Peeshoo is eaten by the natives, and is said, though devoid of flavor, to be agreeably tender. It is not so prolific as the generality of the feline tribe, as the number of its young seldom exceeds two, and it only breeds once in the year. The range of this animal is rather extensive, and in the wide district where it takes up its residence is found in sufficient plenty to render its fur an important article of commerce.

The length of this animal slightly exceeds three feet.

CANADA LYNX.—*Lynx canadensis.*

THE BOOTED LYNX derives its somewhat peculiar name from the deep black coloring with which its legs are partially stained. The side and the hinder portions of the legs are partially covered with black hair, which gives the animal, when seen from behind, a quaint aspect, as if it had been endued with a pair of short tight-fitting black buskins.

The fur of this animal is rather variable in its coloring, and it is found that the coat of the female is rather more yellow than that of the male. The tail is marked with several dark rings upon a whitish ground, the tip of the tail being black.

The general tint of the fur is a deep gray, sometimes varied by a reddish tawny hue, and sometimes plentifully besprinkled with black hairs. On the upper part of the legs there are some very faint stripes of a ruddy brown, and two similar bands may be observed on the sides of the face. When young, the fur is marked with dark stripes and blotches, which are found sparingly on almost every portion of the body, but are most conspicuous on the sides. It is spread over the two vast continents of Asia and Africa, being found in the southern parts of India and the greater part of Africa, from Egypt and Barbary to the Cape.

Its food consists of the smaller quadrupeds, and such birds as it can capture. It is by no

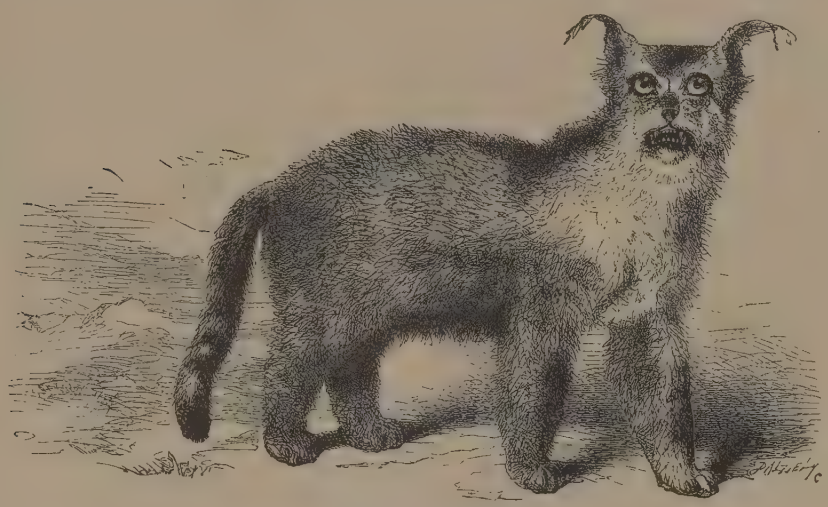
means a large animal, being barely two feet in length exclusive of the tail, which measures rather more than a foot.

The Lynx genus is characterized by the absence of the small premolar tooth, and the brief and abruptly truncate tail. Some differences are also seen in the cranium as contrasted with that of the genus *Felis*. There are four species or varieties of Lynx in the United States.

The American Wild Cat (*Lynx rufus*) has a wide distribution, varying greatly in coloration in certain portions of the country.

A Texas variety, called *maculatus*, is found in California and Texas. Some slight markings or dark lines along the sides of the neck, and rather longer ears, distinguish it.

The Red Cat (*Lynx fasciatus*) is the one discovered by Lewis and Clark in their journey in the Western Territories in the early part of this century. It has a very full and soft fur, and pencilled ears. The back is of a rich chestnut brown, which is the principal distinguishing feature.



BOOTED LYNX.—*Lynx caligatus.*

The Canada Lynx is the largest of all the North American species. It is quite easily distinguished by its general aspect of bulkiness. Its feet are larger, and the longer hair gives a stouter look to the limbs and body. The neck has a pointed ruff on each side. The tail is very short, but densely covered with hair. The general color is variable, sometimes being quite whitish. There are pencils of black on the ear tips. The European species (*Lynx virgatus*) is so closely like this, it has at one time been regarded as the same. It is common in the northern portions of New York State. It preys on the hare and other small quadrupeds.

No species of Lynx is found in South America.

A beautiful and accurate example of the Canada species is shown in the engraving, p. 170.

THE beautifully marked and elegantly formed creature which is represented in the following engraving, is worthy the attention of all who are interested in the wondrous influence which can be exerted by the human mind upon the very being of the lower animals. The CHETAH, Youze, or Hunting Cat, as it is indifferently named, is, like the Booted Lynx, an inhabitant of Asia and Africa. It is rather a large animal, exceeding an ordinary leopard in stature. The superiority in size appears to be greater than it is, on account of the very long limbs of the Chetah, which give it the aspect of a very large animal. The head, however, is very small in proportion to its height, and the limbs, although very long, are slender, and devoid of that marvellous strength that lies latent in the true leopard's limb.

The title "jubata," or crested, is given to the Chetah on account of a short, mane-like crest of stiff long hairs which passes from the back of the head to the shoulders. Although the

Chetah is popularly termed the "Hunting Leopard," it can lay but little claim to the pardine title, and has probably been placed among the true leopards more on account of its spotted hide than for its shape and structure. The claws of this animal are but partially retractile, nor are they so sharply curved, nor so beautifully pointed, as those of the leopard. The Chetah is unable to climb trees like the leopard, and in the general contour of its body evidently forms one of the connecting links between the feline and the canine races.

The Chetah is one of those animals which gain their living by mingled craft and agility. Its chief food is obtained from the various deer and antelopes which inhabit the same country, and in seizing and slaying its prey no little art is required. The speed of this animal is

CHETAH.—*Guepardajubata.*

not very great, and it has but little endurance; so that an antelope or a stag could set the spotted foe at defiance, and in a short half-hour place themselves beyond his reach. But it is the business of the Chetah to hinder the active and swift-footed deer from obtaining that invaluable half-hour, and to strike them down before they are aware of his presence.

In order to obtain this end, the Chetah watches for a herd of deer or antelopes, or is content to address himself to the pursuit of a solitary individual, or a little band of two or three, should they be placed in a position favorable for his purpose. Crouching upon the ground so as to conceal himself as much as possible from the watchful eyes of the intended prey, the Chetah steals rapidly and silently upon them, never venturing to show himself until he is within reach of a single spring. Having singled out one individual from the herd, the Chetah leaps upon the devoted animal and dashes it to the ground. Fastening his strong grip in the throat of the dying animal, the Chetah laps the hot blood, and for the time seems forgetful of time or place.

Of these curious habits, the restless and all-adapting mind of man has taken advantage, and has diverted to his own service the wild destructive properties of the Chetah. In fact, man has established a kind of quadrupedal falconry, the Chetah taking the place of the hawk, and the

chase being one of earth and not of air. The Asiatics have brought this curious chase to great perfection, and are able to train Chetahs for this purpose in a wonderfully perfect manner.

When a Chetah is taken out for the purpose of hunting game, he is hooded and placed in a light native car, in company with his keepers. When they perceive a herd of deer, or other desirable game, the keepers turn the Chetah's head in the proper direction, and remove the hood from his eyes. The sharp-sighted animal generally perceives the prey at once, but if he fails so to do the keepers assist him by quiet gestures.

No sooner does the Chetah fairly perceive the deer than his bands are loosened, and he gently slips from the car. Employing all his innate artifices, the quadrupedal hunter approaches the game, and with one powerful leap flings himself upon the animal which he has selected. The keepers now hurry up, and take his attention from the slaughtered animal by offering him a ladleful of its blood, or by placing before him some food of which he is especially fond, such as the head and neck of a fowl. The hood is then slipped over his head, and the blinded animal is conducted, patient and unresisting, to the car, where he is secured until another victim may be discovered.

It is a very curious fact, that although the Chetah is found in Africa as well as in Asia, it has not been subjected to the dominion of man by the African races, but is suffered to roam at large, unfettered and unblinded.

The natural disposition of this pretty creature seems to be gentle and placid, and it is peculiarly susceptible of domestication. It has been so completely trained as to be permitted to wander where it chooses like a domestic dog or cat, and is quite as familiar as that animal. Even in a state of semi-domestication it is sufficiently gentle. One sleek and well-conditioned specimen with which I made acquaintance behaved in a very friendly manner, permitting me to pat its soft sides, or stroke its face, and uttering short self-sufficient sounds, like the magnified purr of a gratified cat. Unfortunately, the acquaintance was rudely broken up by an ill-conditioned Frenchman, who came to the front of the cage, and with his stick dealt the poor animal a severe thrust in the side. The Chetah instantly lost its confident expression, and was so irritated by this rough treatment that it would not permit a repetition of the former caresses.

Certainly these caged animals have a wondrous perception of the intentions of those who visit them. I heard one curious instance of forbearance on the part of a caged tiger.

A little girl, about five or six years of age, was taken to see the lions and tigers in a travelling menagerie. They presented to her mind the idea that they were simply very large cats, only differing in size from her favorite cat at home. So she crept close to the cage, and getting on a stone, in order to lift her small person to a proper elevation, fearlessly thrust her arm through the bars, and began to stroke the nose of the tiger. The spectators, seeing the child thus engaged, very unwisely set up a general scream, which had the effect of startling the tiger, and of making it so suspicious, that a second attempt to stroke it now would have probably resulted in the loss of the arm.

The fur of the Chetah is rather rough, and is by no means so smooth as that of the African or Asiatic leopard. Its color is very similar to that of the leopard, but the ground color of the fur is of a deeper fawn. The spots which so profusely stud the body and limbs are nearly round in their form, and black in their tint. Excepting upon the face there seem to be no stripes like those of the tiger, but upon each side of the face there is a bold black streak which runs from the eye to the corner of the mouth. The hair about the throat, chest, and flanks is rather long, and gives a very determinate look to the animal.

The Chetah is known as an inhabitant of many parts of Asia, including India, Sumatra, and Persia, while in Africa it is found in Senegal, and at the Cape of Good Hope.

HYENAS.

THE group of animals which are so well known by the title of HYENAS, are, although most repulsive to the view, and most disgusting in their habits, the very saviors of life and health in the countries where they live, and where there is necessity for their existence. In this land,

and at the present day, there is no need of such large animals as the Hyenas to perform their necessary and useful task of clearing the earth from the decaying carcasses, which cumber its surface and poison its air, for in our utilitarian age even the very hairs from a cow's hide are turned to account, and the driest bones are made to subserve many uses. We need not the Hyenas, with their strong teeth, their powerful jaws, their rapid digestion, and their insatiable appetite. For the animal substances which are cast out unburied on our land are generally either eaten or buried by certain of the insect tribes, who are of a verity visible providences to us, assimilating into their own being, or that of their progeny, the putrefying matter that, but for their providential interference, would pour out clouds of poisoned gases, rife with pestilence and disease.

In those countries, as well as in our own, there are carnivorous and flesh-burying insects, which consume the smaller animal substances; but the rough work is left to those industrious scavengers the Hyenas, which content themselves with the remains of large animals.

In the semi-civilized countries of Africa and Asia, the Hyena is a public benefactor, swallowing with his accommodating appetite almost every species of animal substance that can be found, and even crushing to splinters between his iron jaws the bones which would resist the attacks of all other carnivorous animals.

There are several species of Hyenas, which are found in Asia and Africa, such as the Striped Hyena, sometimes called the Crested Hyena, or Strand Wolf, the Brown Hyena, and the Tiger Wolf, or Spotted Hyena. The habits of all these animals are very similar. The animals comprising this group are remarkable for their slouching, shambling gait, which is caused by the disproportion that exists between their legs. The fore-legs, which are used for digging, are powerful and well developed, but the hinder pair are so short that the line of the back slopes suddenly downwards from the hips, and gives to the creature a most sneaking and cowardly look. There are only four toes on each foot.

Useful as is the Hyena when it remains within its proper boundaries, and restricts itself to its proper food, it becomes a terrible pest when too numerous to find sufficient nourishment in dead carrion. Incited by hunger, it hangs on the skirts of villages and encampments, and loses few opportunities of making a meal at the expense of the inhabitants. It does not openly oppose even a domestic ox, but endeavors to startle its intended prey, and cause it to take to flight before it will venture upon an attack. In order to alarm the cattle it has a curious habit of creeping as closely as possible to them, and then springing up suddenly just under their eyes. Should the startled animals turn to flee, the Hyena will attack and destroy them; but if they should turn to bay, will stand still and venture no farther. It will not even attack a knee-haltered horse. So it often happens that the Hyena destroys the healthy cattle which can run away, and is afraid to touch the sickly and maimed beasts which cannot flee, and are forced to stand at bay.

Among the warlike tribes that inhabit the greater part of Africa this cowardly disposition throws a sad discredit on the animal, and they lavish upon the Hyena their copious vocabulary of abusive terms. Even a weapon which has been used for the purpose of killing a Hyena is held by them as entirely defiled, and rendered unfit for the use of a warrior. Jules Gérard relates an incident of Hyena hunting, which, although it reflects a little upon himself, he narrates with much humor.

He had left the encampment, and was proceeding hurriedly along the path, when he suddenly came upon a rough, hairy animal, which had been surprised by daybreak, and was shambling along towards its home with a limping, hobbling gait, and an air of blank astonishment. The animal, a Hyena, made off as fast as it could, and the hunter, having left his gun with an attendant who was lingering behind, was fain to draw his sabre, and charge the retreating beast as he best could. The Hyena was too quick for him, and plunging among the bushes disappeared into a cavity at the foot of a rock.

The hunter was determined to secure the animal if he could, so he tied his horse to a bush, and crawled into the little cavern. When fairly inside he found that he was within a deserted stone quarry, where he could stand erect and freely use his arms. The cavern was so dark, however, that he could not see the Hyena, and the only indication of its presence was afforded

STRIPED HYENA.

by its teeth grinding upon the sword-blade, and endeavoring to drag the weapon from his hand. In a few moments his eyes became accustomed to the obscurity, and he could perceive the Hyena still holding on to the point of the sword. A sudden effort sufficed to free the weapon, and with a quick thrust, the blade was buried to the hilt in the creature's breast, laying the Hyena dead on the floor of the cave.

Just as M. Gérard had withdrawn the dripping sword, and was about to drag the slain animal from the cave, his attendant arrived, accompanied by some negroes whom he had pressed into the service.

The hunter thought that he had deserved some credit for his hand-to-hand combat with so powerful an animal, and was unpleasantly disappointed when the Arab recommended him to return thanks that he had not used his gun, and advised him to discard the ensanguined sabre, as it would betray him. Indeed he found that he had committed a woeful blunder, and that it behoved him to achieve some specially daring deed in order to stop the slanderous tongues of the Arab tribes.

He afterwards found that the Arabs scorned to use a weapon against the Hyena, which they killed in a most unique manner.

Taking a handful of wet mud, or similar substance, and presenting themselves at the mouth of the Hyena's den, they extend their hand to the animal, and say mockingly, "See, how pretty I will make you with this henna!" They then dash the wet compost into the creature's eyes, drag him out by a paw, and gag him before he recovers from the sudden bewilderment. The poor beast is now handed over to the women and children, who stone it to death.

These Hyenas are very fond of dog-flesh, and employ a very ingenious mode of catching their favorite prey. The female Hyena creeps quietly, and ensconces herself behind some bush or other concealment not far from a village or a temporary encampment. Her mate then plays his part by running boldly forwards, and making himself as conspicuous as possible, so as to draw the attention of some of the multitudinous dogs which prowl about human habitations. Out rush the dogs at the sight of the intruder, and the Hyena runs off as fast as he can, taking care to pass near the spot where his mate is lying concealed. The result may be imagined.

It is not often the case that the Hyena will commit itself to so bold an action, for it is never known to be venturesome unless compelled by dire hunger.

THE STRIPED HYENA is easily to be distinguished from its relations by the peculiar streaks from which it derives its name. The general color of the fur is a grayish-brown, diversified with blackish stripes, which run along the ribs, and upon the limbs. A large singular black patch extends over the front of the throat, and single black hairs are profusely scattered among the fur. When young, the stripes are more apparent than in adult age, and the little animal has something of a tigrine aspect about its face. The reason for this circumstance is twofold; firstly, because the groundwork of the fur is lighter than in the adult Hyena; and secondly, because the stripes are proportionately much broader than in the full-grown animal, and therefore occupy more space.

Although the Hyena is so cowardly an animal, yet, like all cowards, it becomes very bold when it finds that it can make its attack with impunity. Emboldened by numbers, and incited by fierce hunger, the Hyenas become the very pests of the native African towns; roaming with impunity through the streets in search of the garbage that is plentifully flung from the houses, and conducting themselves with the greatest impudence. At nightfall the inhabitants are fain to close their doors firmly, for these dangerous brutes have been known to seize a sleeping man, and to kill him with the terrible grip of their powerful jaws.

In proportion to its size, the Hyena possesses teeth and jaws of extraordinary strength, and between their tremendous fangs the thigh-bones of an ox fly in splinters with a savage crash that makes the spectator shudder. The skull of this animal is formed in a manner that at once points it out as belonging to a creature of enormous power. The "zygomatic" arches of bone that extend from the eyes to the ears are of exceeding strength and thickness; and along the top of the head there runs a deep bony crest that projects beyond the brain cavity,

and serves for the attachment of the powerful muscles to which the animal owes its singular strength. So forcibly are these muscles exerted that the vertebræ of the neck are sometimes found to have united together—"anchylosed" according to the professional term, on account of the violent tension to which they were continually subjected.

The muzzle is but short, and the rough thorn-studded tongue is used, like that of the feline groups, for rasping every vestige of flesh from the bones of the prey.

THE BROWN HYENA is so named on account of the color of its fur, which is of a blackish-brown tint, diversified with a lighter hue upon the neck and throat, and a few indistinctly

STRIPED OR CRESTED HYENA.—*Hyæna striata.*

marked bands of a blackish-brown across the legs. The hair of this species is extremely long, and has a decided "set" backwards.

Sometimes the brown hue of the fur is washed with a warmer tint of chestnut, from which circumstance the animal has been termed "Crocuta rufa," the latter word signifying a ruddy hue, and being applied especially to hair.

THE last of the three acknowledged species of Hyena is a larger and heavier built animal than either of the preceding species, from which it is easily distinguishable by the numerous and well-defined spots that are scattered over its body and limbs. The SPOTTED HYENA, or Tiger Wolf, as it is generally called, is, for a Hyena, a fierce and dangerous animal, invading the sheep-folds and cattle-pens under the cover of darkness, and doing in one night more mischief than can be remedied in the course of years.

The spots, or rather the blotches, with which its fur is marked, are rather scanty upon the back and sides, but upon the legs are much more clearly marked, and are set closer together. The paws are nearly black. In the collection of the British Museum is a very young specimen, which, curiously enough, is devoid of the spots that mark its adult fur, thereby presenting a remarkable contrast to the animals which we have already mentioned. For example, the lion, which in mature age is of a uniform tawny hue, is covered when young with spots and stripes, which seem to partake equally of the tigrine and pardine character. The young puma, again, exhibits strongly marked spots of a deeper hue upon its pale tawny fur, and retains them for a considerable time. Indeed, even in the fur of an adult puma may be discerned the

BROWN HYENA. – *Hyæna brunnea.*

remnants of these maculations when the animal is placed in certain lights. The Striped Hyena, again, exhibits more decisive markings while young than after it has attained its full growth, and there are many other similar instances. These examples would seem to justify the idea, that the young of these and similar animals were deeper in their coloring than their parents. Yet, in direct opposition to this seeming rule, we find the young of the Spotted Hyena to possess a simple, ruddy, brown fur, similar in color to that of the Brown Hyena. It is worthy of notice, that whatever dark spots, stripes, or blotches exist upon an animal, whether in its young or its adult state, they may always be found either upon the back, following the line of the vertebræ, or upon the legs. And even in those numerous cases where, as in the leopard, tiger, ocelot, and other striped and spotted animals, the dark markings are persistent through the entire life of the creature, these dark spots and stripes are always found to be more powerfully developed upon the spine and on the legs. I would here offer a suggestion: that we may find a key to this curious enigma in the fact, that the darker fur seems, in these animals,

to accompany the chief voluntary nerves, and therefore to become more conspicuous upon the line of the all-important nervous column that runs along the back, and of the great branch nerves which supply power and energy to the limbs. It will be borne in mind that the complicated ganglionic system of nerves that intertwines itself among the vital organs, and is woven into such manifold reticulations on the "epigastrium," is of a different character from the round cord-like nerves of motion, and is found mostly in those parts of the body where the fur is palest.

The Tiger Wolf is celebrated for the strange unearthly sounds which it utters when under the influence of strong excitement. The animal is often called the "Laughing Hyena" on account of the maniacal, mirthless, hysterical laugh which it pours forth, accompanying these

SPOTTED HYENA, OR TIGER WOLF.—*Crocuta maculata.*

horrid sounds with the most absurd gestures of body and limbs. During the time that the creature is engaged in uttering these wild fearful peals of laughter it dances about in a state of ludicrously frantic excitement, running backwards and forwards, rising on its hind legs, and rapidly gyrating on those members, nodding its head repeatedly to the ground; and, in fine, performing the most singular antics with wonderful rapidity.

The ancients, who had the vaguest possible ideas of the Hyena, and considered it to be as fearful a foe to humanity as the lion, thought that the animal was accustomed to decoy stray travellers to its den by imitating the laughter of human revellers, and then to kill and devour those who had been deceived by the simulated revelry. Besides the ordinary teeth and claws with which a Hyena was furnished, these ancient authors supplied the Hyena with two additional rows of teeth in each jaw, and a supply of sharp darts at the extremity of the tail. The triple row of teeth was evidently borrowed from the shark, which is indeed a kind of marine Hyena, and the caudal darts were clearly adopted from the skin of the porcupine.

The Hyena is too vexatious a neighbor not to be persecuted, and frequently falls a victim to the treacherous spring-gun, in spite of the benefits which he confers on mankind by his unfailing energy in devouring every scrap of eatable food.

To set a gun for the purpose of Hyena shooting is an easy matter, and is managed as follows. The loaded musket is fixed horizontally to a couple of posts, about the height of a Hyena's head. A string is then fastened to the trigger, one end of which is passed behind the trigger guard, or through a ring placed for the purpose, and the other is firmly tied to a piece of meat, which is hung on the muzzle of the gun. When a passing Hyena, prowling about in search of prey, is attracted by the meat, he seizes it between his teeth, and thus draws the trigger of the gun, lodging the bullet in his head. Tenacious of life as is the Hyena, he falls dead on the spot.

In order to attract the notice of the Hyenas, a piece of putrid flesh is dragged along the ground so as to leave an odoriferous trail leading to the treacherous weapon.

Taught by experience, the Hyenas have become so suspicious of an object which they do not understand, and to which they are not accustomed, that the very sight of a piece of string alarms them, and guards them from self-immolation in many a trap. So the farmers, who chiefly set these explosive traps, match the creature's cunning by their own superior intellect, and substitute the stems of creeping plants for the hempen cord or leathern strings. These objects are regarded without suspicion, and by their assistance the outwitted Hyena is laid low.

In chasing living animals the Hyena employs the same caution that characterizes his ordinary proceedings. When they seize their prey the Hyenas carefully avoid those spots where the affrighted animal might reach them with its hoofs, teeth, or horns. They never seem to spring on the animals's neck, but hang on to its flanks, dragging it to the ground by the mingled weight of their body and the pain of the wound. Many veteran oxen and horses are deeply scarred in the flanks by the teeth of the Hyena, which has made its attack, but has been scared away or shaken off.

The eyes of the Hyenas are singularly repulsive in their expression, being round, dull, and almost meaningless.

There are man-eaters among the Hyenas, and these hominivorous animals are greatly dreaded, on account of the exceeding stealthiness and craft with which they achieve their object.

They very seldom endeavor to destroy the adult men and women, but limit their attacks to the young and defenceless children. On dark nights the Hyena is greatly to be feared, for he can be guided to his prey by the light of the nocturnal fires which do not daunt an animal that is possessed by this fearful spirit of destructiveness, and at the same time can make his cautious approaches unseen. As the family are lying at night, buried in sleep, the Hyena prowls round the inclosure, and on finding a weak spot the animal pushes aside the wattle bands of which the fence is made, and quietly creeps through the breach.

Between the human inhabitants and the fence, the cattle are picketed by night, and would fall an easy prey to the Hyena if he chose to attack them. But he slips cautiously amid the sleeping beasts, and makes his way to the spot where lies a young child, wrapped in deep slumber. Employing the same silent caution, the Hyena quietly withdraws the sleeping child from the protecting cloak of its mother, and makes its escape with its prey before it can be intercepted.

With such marvellous caution does this animal act, that it has often been known to remove an infant from the house without even giving the alarm.

It has already been mentioned that the Hyena is in no wise fastidious in its diet, and that it will habitually consume the most indigestible of substances. Yet there seems to be something capricious about the function of assimilating food, which, even in the Hyena, is subject to remarkable fluctuations. To one of these animals, after a fast of thirty-six hours, a dead rat was given, which, as might be expected, it immediately swallowed. In fifteen minutes, the creature rejected the skin and bones of the rat, though the same animal would have eaten with impunity the heavy bones or tough hide of a veteran ox, or even would have made a satisfactory meal on a few yards of leathern strap.

The following anecdotes of the Cape Hyena and its habits are taken from the MS. of Captain Drayson, R.A., to which reference has already been made.

"This animal is very common in South Africa, and being cunning, and rarely venturing out by day, is likely to be longer a denizen of the inhabited districts than many other less formidable creatures. The height at the shoulder is about two feet six inches, and falls towards the rump; extreme length, about five feet ten inches. The head is short and very broad; muzzle and nose black; general color, brown, irregularly blotched with circular black spots. The tail sixteen inches; hairs on the back of the neck and withers long, forming a reversed mane.

"The proper duty of this creature appears to be that of scavenger, and is, with regard to the beasts, what the vulture is to the birds; but owing to its great appetite, and naturally voracious disposition, it does not appear contented with merely the carrion which it might procure, but employs its strength and speed in destroying the flocks and herds of the colonists, or in killing such antelopes as it is enabled to capture.

"If this animal possessed courage in proportion to its strength it would be a very formidable opponent to man, and, as it hunts frequently in packs, might test the skill and boldness of the hunter; but, fortunately, its principal characteristic is cowardice.

"Owing to the custom prevalent amongst many of the South African tribes of exposing their dead to be devoured by beasts of prey, the Hyena has acquired the taste for human flesh, and therefore cases are on record of the huts of Kaffirs having been entered by it, and the children carried off and devoured. Most ably does the Hyena perform his functions in the economy of nature. Whilst the lion selects the choice parts of a slain animal, and the vulture those which he cannot eat, the Hyena comes and finishes hide, bones, and other remnants which have been too tough for the digestion of the others.

"It appears to be a law of nature that those animals which take the shortest time to fill their stomachs can go the longest time without eating. For example, the horse and the ox will take from half an hour to one hour and a half to feed, and they will both suffer if they are kept more than a day without food. The wolf and the dog can make a very satisfactory meal in about two minutes, and either can remain two or three days without suffering much for want of a meal. We may even remark that this instinctive mode of eating food is prevalent among human beings.

"The rough ploughboy, whose meals are limited in number to one or two daily, and are composed of coarse bread and fat bacon, swallows in a few minutes these articles of food in great morsels which he can hardly force into his mouth, and which he scarcely takes the trouble to masticate. The food which is thus taken into the system will repel the feeling of faintness consequent on an empty stomach much more than if it were leisurely eaten and properly subjected to the action of the teeth. This result is only natural, for the better food is masticated, the sooner is it digested.

"The Hyena in the Zoological Gardens appears well acquainted with this fact, for on one occasion, being anxious to see how easily he crushed a huge bone of beef, I took my station in front of his cage, just before feeding time. After the usual laugh had been extracted from crowd and Hyena, a leg of beef was forced under the bars, and was seized by the hysterical scavenger. A few strips of flesh were torn off and swallowed, and then there remained about nine inches of bone and sinew; instead of crushing these into little pieces, and then swallowing it, as I expected, the wise animal just turned the bone 'head on,' took it in his jaws, made a face, contorted his body, and that solid mass was deposited in the yawning sarcophagus. The crowd laughed and dispersed, but did not remark what experience had probably taught this prisoner, viz., that when he swallowed the bone whole he was not so famished by the next day's dinner-hour as when he ground it up into small pieces. This Hyena, having but little variety of occupation for its mind, had probably devoted much patient thought to the adjustment of this fact.

The Hyena usually lives in holes, or amongst rocks, in retired localities, and when the sun has set he comes forth and searches for food. He then utters a long melancholy howl, which finishes with a sort of bark, and occasionally that fiend-like laugh which, when heard in the desert, amid scenes of the wildest description, calls up in the imagination of the solitary traveller the forms of some spectral ghouls searching for their unnatural feast

"The smell of the Hyena is so rank and offensive that no animal, other than of its own species, will come near the carcass. Dogs, when they come across the scent of the Hyena, at once show signs of fear; they will scarcely leave their master, and, with bristling manes and wild looks, examine every inch of ground over which they pass.

"The spoor of the Hyena is somewhat similar to, but larger than that of the dog; the nails not being retractile, usually leave an impression upon soft ground, which is not the case with the leopard. The inside toe of each foot is smaller than the outside, and the footmarks can be easily recognized and distinguished from those of dogs.

"During one warm afternoon, whilst riding over the grassy slopes on the banks of the Umganie River, near Pietermaritzberg, and attended by a cunning old pointer, I saw the dog stand on the brink of an old water-course, and bark fiercely at some object which appeared to be stationed below. I knew that the bark and the expression which accompanied it was the dog-language for 'there's something here,' so I dismounted, and walked towards the dyke. As I approached, the dog, with an aspect of alarm, sprang back, and then rushed forward again. From having had several unpleasant rencontres with poisonous snakes I had become very cautious, and advanced so slowly that I was only enabled to catch a glimpse of a Hyena, which, upon seeing me, immediately retreated into an opening.

"I descended the steep bank and found a large hole, which appeared to be the entrance to a subterraneous passage, by which the water obtained an exit. I collected a few sticks and some long grass, which I placed over the entrance, and then endeavored to trace the course of this passage, to see if there were another opening.

"About fifty yards from the first I found a second hole, which evidently led to the first; neither of these was large enough to admit me, and the dog could not have done much good even had he entered; but he appeared to have a great objection to approach too near to the den.

"After some consideration, I determined to cut a quantity of the dry grass, to fill one opening with it, set it on fire, and then to watch near the other hole. This plan failed to unearth the creature, so I reversed the arrangement, but with no better success.

"At length I fired several bullets into the opening, trusting that a stray shot might strike near the Hyena, and that it would drive him into open ground. The sinuosities of the passage prevented the possibility of a fair shot.

"Whilst thus engaged, the dog suddenly barked and dashed off. Upon reaching the top of the bank, I saw the Hyena scrambling over the hills, closely followed by my dog. I mounted my pony, but the pace was too good for him. I, however, held the Hyena in view for a considerable time as it passed over the successive ridges, but the pointer soon gave up his pursuit.

"I think that when the ordinary game is driven away by sporting men, or killed by sportsmen, Hyena-hunting with a pack of hounds would be found very good sport, and perhaps we should have Hyena-hunters sneering at fox-hunters as much as some fox-hunters now do at 'thistle-whippers.'

"The Hyena is frequently caught in a trap of simple construction. Stakes are driven into the ground so as to form an inclosure, and a hanging door of stone, sustained by a cord, closes the aperture when it falls. A bait is placed at the farther end of the trap, and the whole contrivance is like a large mouse-trap. When caught, the Hyena is despatched with spears and clubs, or is shot.

"The traveller is frequently disturbed during the night by the daring Hyenas, who will sneak about his wagons in search of leather straps, trektows, and other savory provender; and if a pair of shoes or some leather breeches happened to be left in an exposed situation during the dark hours, they may be considered lost without redemption, for such a supper would be an unlooked-for luxury by the gaunt brute."

One of these animals was discovered in a state of sad laceration. The two fore-paws were gone, and the legs themselves had been frightfully torn, evidently by some powerful beast of prey. The natives said that the Hyena had been thus punished by the lion for interfering with his arrangements, and stated, moreover, that the lion frequently corrected the forward

conduct of the Hyena, by biting off every one of its paws. This statement, curious as it may seem, was corroborated by several experienced hunters.

Although in former days the Hyena was supposed to be a wholly untamable animal, later experiments have shown that it is nearly as tractable and affectionate as a dog when it has the benefit of similar treatment. It has been known to accompany its master as familiarly as any dog, and to recognize him with airs of joy after a lengthened absence. The potency which some persons exert over animal natures is most remarkable. It may be that such persons pour much love upon all things, and therefore upon the animals with which they come in contact. So love, creating love,—which is the highest gift of God, and the sum of His divine attributes,—calls forth in animals the highest attributes of their nature, and through this higher quality, develops their intellectual capacities.

CIVETS.

It is generally the case with the greater divisions of animals that there exists certain intermediate forms of animal life, which seem to be rather higher than the one division, and lower than the other, being, in fact, transitional forms between the higher and the lower groups. Thus the Colugo, or Flying Lemur, is an intermediate form between the monkey and bats, and the Aard Wolf is intermediate between the hyenas and the Civets, belonging, however, more to the latter than the former group of animals. It is much smaller than the hyenas, but larger than the Civets and genetts, and, indeed, has indifferently been called a hyena, a jackal, or a Civet.

AARD WOLF.—*Proteles cristatus.*

The form of the Aard Wolf much resembles that of the hyena, the fore-quarters being powerful and well developed, and the hinder quarters low and sloping. The general aspect of the creature is very similar to that of the hyena, for, in addition to the hyenine sloping back and weak hind legs, the fur is rough, coarse, and colored in a manner not unlike that of the striped hyena. The tail is very large in proportion to the size of the animal, and is thickly covered with long bushy hair, black at the extremity, and blackish-gray on the other portions of that member. The back of the neck and the shoulders are furnished with a thick bristling mane, which it can erect when excited, and it then resembles a minature striped hyena.

The claws of the fore-feet are sturdy, and firmly attached to the paws, so as to serve their proper use of digging. The Aard Wolf is an admirable excavator, and digs for itself a deep burrow, where it lies concealed during the day, buried in sleep at the bottom of its mine. From this habit of burrowing in the earth, the creature has derived its title of "Aard or Earth Wolf."

A curious mode of domestic arrangement is carried out by these animals. Several individuals seem to unite in forming a common habitation. Several deep burrows are dug, having their common termination in a small chamber, where three or four Aard Wolves take up their residence. Whether each animal digs and uses its own burrow, or whether the tunnels, as

well as the central chamber, are common to the inhabitants, is not known. It seems, however, to be probable that such a mode of procedure would be adopted, and that each member of the little community appropriated to itself the tunnel which its own paws had dug.

The color of the Aard Wolf is gray, with a decided tinge of yellow. Several broad bands of darker fur are seen on the sides, and the paws are quite black. The hair of this animal is of two kinds,—a thick, short, woolly coating, which lies next to the skin, and a longer and coarser set of hairs, which protrude through the woolly coating, and hang downwards to some length. The adult Aard Wolf is about three feet six inches in total length, the tail being about a foot long.

The food of this animal is similar to that of the hyena, and consists chiefly of carrion and small animals. It does not disdain to make an occasional meal on insects, for a number of ants were discovered in the stomach of an Aard Wolf that had been killed.

CIVET.—*Viverra civetta.*

THE CIVET, sometimes, but wrongly, called the Civet Cat, is a native of Northern Africa, and is found plentifully in Abyssinia, where it is eagerly sought on account of the peculiarly scented substance which is secreted in certain glandular pouches. This Civet perfume was formerly considered as a most valuable medicine, and could only be obtained at a very high price; but in the present day it has nearly gone out of fashion as a drug, and holds its place in commerce more as a simple perfume than as a costly panacea.

In this animal we may trace a decided resemblance to the Aard Wolf, both in the shape of the body and in the markings.

But the Civet bears itself in a very different manner, having more of the weasel than of the hyenine nature, and the coloring of the fur is of a much richer character than that of the previously mentioned animal.

It is nearly as large as the Aard Wolf, its total length being about three feet six inches, of which the tail occupies nearly one-third. Along the back, and even on part of the tail, runs a boldly marked crest or mane, which can be erected by the animal at pleasure, or can lie nearly, but not quite, evenly with the fur.

The substance which is so prized on account of its odoriferous qualities is secreted in a double pouch, which exists under the abdomen, close to the insertion of the tail. As this

curious production is of some value in commerce, the animal which furnishes the precious secretion is too valuable to be killed for the sake of its scent-pouch, and is kept in a state of captivity, so as to afford a continual supply of the odoriferous material.

The mode by which the Civet perfume is removed from the animal is very ingenious. The animals which belong to this group are very quick and active in their movements, and, being furnished with sharp teeth and strong jaws, are dangerous beasts to handle. As may be imagined, the Civet resents the rough treatment that must be used in order to effect the desired purpose, and snaps and twists about with such lithe and elastic vigor that no one could venture to lay a hand on it without sufficient precaution. So, when the time arrives for the removal of the perfume, the Civet is put into a long and very narrow cage, so that it cannot turn itself round. A bone or horn spoon is then introduced through an opening, and the odoriferous secretion is scraped from its pouch with perfect impunity. This end achieved, the plundered animal is released from its strait durance, and is permitted a respite until the supply of perfume shall be re-formed.

As the Civet might be inconvenienced by the continual secretion of this substance, Nature supplies a simple remedy, and the perfume falls from the pouch in pieces about the size of an ordinary nut. The interior of each half of the pouch is sufficiently capacious to hold a large almond. As the civet is formed, it is pressed through very small orifices into the pouch, so that if it is examined before it has merged itself into a uniform mass, it is something like fine vermicelli in appearance. The interior of the pouch is thickly coated with fine hairs, and entirely covered with the minute orifices or pores through which the perfume exudes. The creature is able to compress the pouch at will.

The Civet seems to be a very sleepy animal, especially during the daytime, and to be with difficulty aroused from its somnolence.

While it remains in the pouch, the "civet" is rather thick and unctuous, something like butter in texture.

The use which this curious secretion subserves in the economy of the creature is very dubious. It is not sufficiently liquid to be ejected against its pursuers, and so to repel them by its odor, as we know to be the case with the celebrated skunk of America, and other animals. It may be, that this substance can be re-absorbed into the system, and thus serve an important purpose; but whatever its use may be, it is clear that it serves some worthy object, and that therefore the production of this secretion is deserving the attention of those who have the opportunity of making practical experiments.

The claws of the Civet are only partially retractile. The eyes are of a dull brown, very protuberant, and with a curiously changeable pupil, which by day exhibits a rather broad linear pupil, and glows at night with a brilliant emerald refulgence. The body is curiously shaped, being considerably flattened on the sides, as if the animal had been pressed between two boards.

Altogether, the Civet is a very handsome animal, the bold dashing of black and white upon its fur having a very rich effect. The face has a curious appearance, owing to the white fur which fringes the lips, and the long pure white whisker hairs of the lips, and eyes. When young, it is almost wholly black, with the exception of the white whisker hairs and the white fur of the lips. It seems to be an irritable animal, and, when angered, vents its indignation by fierce growls.

Upon the Asiatic continent, and its islands, the place of the civet is taken by several of the Viverrine tribe, one of which, the Zibeth, bears a close resemblance to its African relative.

The Zibeth is a native of many parts of Asia, being found in China, India, the Philippines, Nepal, and other localities. It may be distinguished from the civet by the greater amount of white which is found in the fur, especially about the neck and throat, by the shorter hair, and by the greater number of dark rings upon the tail. The tail of the Zibeth is not so largely marked with black at its extremity as that of the civet. The mane or crest which runs along the back is comparatively small. The spots which mark the body are rather indistinctly outlined, and the general tint of the fur seems to be paler than that of the civet.

It is furnished with a musk-secreting pouch like that of the African civet. It is a lethargic animal in captivity, and even in a wild state passes the day in sleep, and only seeks its food after dark. Its usual diet is composed of birds and the smaller mammalia, but it will also eat various fruits, especially those of a sweet nature. In size it nearly equals the civet. In captivity it is a gentle creature, and is so completely tamed by the natives of the countries where it is found that it inhabits the house like a domestic cat and employs itself in similar useful pursuits.

ZIBETH.—*Viverra zibetha.*

The animal which is known by the native name of TANGALUNG, bears some resemblance to the preceding animals. The black markings, however, are more distinct, and along the direction of the spine the fur is most deeply black. On the lower part of the throat and neck are three curiously shaped black bands, very wide in the middle and very narrow at each end, the central band being several times wider than the others.

The length of this animal is two feet six inches, the head measuring nearly seven inches in length, and the tail about eleven inches. The head is rather wide and rounded, and is suddenly contracted towards the nose, so as to form a rather short muzzle. The tail is nearly cylindrical, and does not taper so much as that of the zibeth, and the body is furnished with a close downy covering of soft hairs next the skin. It is partly to this woolly hair that the cylindrical outline of the tail is owing. The Tangalung is a native of Sumatra.

The RASSE is spread over a large extent of country, being found in Java, various parts of India, Singapore, Nepal, and other localities. The color of its fur is a warm grayish-brown, upon which are placed eight parallel lines of elongated dark spots. The dark rings which mark the tail pass entirely round that member, while those which are found on the tail of the zibeth reach little more than half the circumference of the tail. The texture of the fur is rather coarse and stiff, and it is not very thickly set. The ears of this animal approach each other very closely at their base, being only separated by the space of an inch, whereas there is an interval of two inches between the ears of the zibeth.

In the Javanese language, the word "Rasa," from which the name Rasse is taken, signifies a sensation of the palate or the nostrils, so that it may be applied to the senses of smelling or tasting. It generally refers to odoriferous substances.

The perfume which is furnished by the Rasse is secreted in a double pouch, like that of the civet, and is removed from the animal in precisely the same manner. It is highly valued by the Javanese, who imbue their persons, their rooms, and their garments so strongly with this substance that a European nostril is grievously affected at the all-pervading odor. The substance itself is termed Dedes.

As far as is known of the disposition of this animal, it appears to be savage and irritable, bearing captivity very impatiently, and never losing its wild ferocious nature. It is a very

RASSE.—*Viverra indica.*

destructive creature among the animals on which it feeds, and on account of its long sharp teeth can inflict a severe bite when it is angry. In captivity it generally feeds on eggs, various birds, and meat and fish, and a little rice. The natives say that salt is a poison to it.

DELUNDUNG.—*Prionodon gracilis.*

The pretty animal which is represented in the accompanying engraving is remarkably rich in coloring, as well as graceful in form. The DELUNDUNG is a native of Java and Malacca, and is destitute of the scent-pouches which are so curious a characteristic of the preceding Viverrine animals. It is not at all a common animal, and its habits are not very clearly known.

The general color of the fur is a moderately deep gray, and upon the back are drawn four very large, saddle-shaped stripes of an exceedingly dark and rich brown, extremely broad on the spine, and becoming very narrow on the ribs. Along the sides run two rows or chains of similarly colored markings, the upper band being occasionally merged in the broad stripes that cross the back. The lower band extends from the cheeks to the flanks. The legs are finely spotted, and the tail is covered with alternate rings of gray and dark brown, the rings becoming more distinct towards the point of the tail.

The creature has been termed Priónodon, or "Saw-tooth," on account of the curiously shaped teeth, which present a jagged, or saw-like appearance. Its limbs are very slender and delicately formed. Although a scarce animal in every part of Java, it is especially so in any part of the island except the eastern end, where it is found among the thick forests with which that locality is densely clothed.

GENETTS.

A SMALL, but rather important, group of the Viverrine animals, is that the members of which are known by the name of the GENETTS. These creatures are all nocturnal in their habits, as are the civets, and, like those animals, can live on a mixture of animal and vegetable food, or even on vegetable food alone. The Genetts possess the musk-secreting apparatus, which much resembles the pouch of the civet, although in size it is not so large, nor does it secrete so powerfully smelling a substance as that of the civets. The secreting organ, although it resembles a pouch, is not so in reality, being simply composed of two glands, united to each other by a strip of skin.

The best known of these animals is the COMMON, or BLOTCHED GENETT, an inhabitant of Southern Africa and of various other parts of the world, being found even in the south of

BLOTCHED GENETT. – *Genetta vulgaris.*

France. It is a very beautiful and graceful animal, and never fails to attract attention from an observer. The general color of the fur is gray, with a slight admixture of yellow. Upon this groundwork dark patches are lavishly scattered, and the full furry tail is covered with alternate bands of black and white. The muzzle would be entirely black but for a bold patch of white fur on the upper lip, and a less decidedly white mark by the nose. The feet are supplied with retractile claws, so that the animal can deal a severe blow with its outstretched talons, or climb trees with the same ease and rapidity which is found in the cat tribe.

Another pretty species of this genus is the PALE, or SENEGAL GENETT.

The fur of this animal is whiter than that of the Blotched Genett, and the markings are rather differently arranged. Along the spine a nearly unbroken dark stripe is drawn, and upon the neck and shoulders the spots have a tendency to merge into each other and to form stripes, extending from the head along the neck and over the shoulders. On

each side of the face is a bold black patch. The hinder legs are quite black at the ankle joint.

These animals are very susceptible of domestication, and in various Eastern districts are as familiar inhabitants of the house as the domestic cat. Like the house cat, the Genett signalizes itself in the destructive wars which it wages against rats and mice, being especially fitted for such a pursuit by its active limbs and lithe form. The Genetts seem, when wild, to prefer the low grounds in the vicinity of rivers to the higher forest lands, and are there captured.

They are not nearly so large as the civet, being only five inches in height at the shoulder, and about twenty inches in total length. The eye is of a light brown color, and rather protuberant. The young of the Pale Genett has the spots of a light chestnut instead of the deep blackish-brown of the adult animal.

CACOMIXLE.—*Bassaris astuta.*

THE AMER GENETT, an inhabitant of Abyssinia, is a boldly and handsomely marked creature. The general color of its fur is a darkish yellow gray, on which are placed a number of well-defined dark spots. These markings run in fine regular lines, being larger nearing the spine, and becoming smaller as they recede therefrom. The tail is boldly and equally covered with rings of the same dark fur as that of the spots on the body.

VERY different from the Genetts in its appearance is the CACOMIXLE,* although it is closely allied to them.

It is remarkable as being a Mexican representative of the Genett group of animals, although it can hardly be considered as a true Genett or a true Mungous. The color of this animal is a light uniform dun, a dark bar being placed like a collar over the back of the neck. In some specimens this bar is double, and in all it is so narrow that when the animal throws its head backwards the dark line is lost in the lighter fur. Along the back runs a broad, singular, darkish stripe. The tail is ringed something like that of the Ringed Lemur, and is very full. The term Cacomixle is a Mexican word, and the animal is sometimes called by a still stranger name, "Tepemaxthalon." The scientific title "Bassaris" is from the Greek, and signifies a fox.

* *Note by the Editor.*—The Cacomixle during several years after its discovery was erroneously placed in the system of nature. Its resemblance to individuals of the group of Civets led to its being regarded as allied to them. As there are no other animals of this family in America, it was regarded as singularly unique. Late examination of its anatomy has led to its recognition as a member of the Raccoon family, an American race. Its general appearance is quite like that of the common Raccoon; indeed, the Mexican non-scientific people have been wiser than our naturalists, for they call it the Ring-tailed Raccoon. In California and Mexico it is tamed by the miners and ranchmen, and it in most respects becomes as domesticated as a house cat. It is by them called the Mountain Cat. It is an efficient mouser; is very playful, and seems to have a choice for the abode of man. It is nocturnal in habit, and produces three young at a birth. The food of the Bassaris is much the same as that of the Raccoons: small animals, insects, nuts, etc. It finds a home in holes of trees, especially in the Pecan tree, where it finds abundance of food in its nuts, and has an especial fondness in remaining on or about one tree. Like some other bright creatures, it selects a rotten knot on the under side of a limb for its nest, thereby finding security from rain.

ICHNEUMONS.

THE two animals which are seen in this engraving are closely allied to each other, but are placed in different genera. The left-hand figure represents the creature which is known by the name of the BANDED MUNGOUS, and which is an inhabitant of Africa. It is a small animal, being about the size of a very large water-rat, and is peculiarly quick and energetic in its movements.

The color of the Banded Mungous is a blackish grizzle, with a chestnut tinge pervading the hind quarters and the tail. Under the chin the fur is of a very light fawn color. Across the back are drawn a row of darker lines, boldly marked towards the spine, but fading imperceptibly into the lighter tinted fur of the sides.

In habits it is singularly brisk and lively, ever restlessly in motion, and accompanying its movements with a curious and most unique sound, something like the croak of a raven.

BANDED MUNGOUS.—*Mungos fasciátus.* GARANGAN.—*Herpestes javánicus.*

When excited it pours out a succession of quick chattering sounds, and when its feelings are extremely touched it utters sharp screams of rage. If its companions should cross its path in its temper it snaps and spits at them like an angry cat, and makes such very good use of its teeth that it leaves the marks of its passion for the remainder of the victim's life. Some of these animals, which have lived for a considerable time in the same cage, have lost a large portion of their tails by the teeth of their comrades. Still it is very playful, and sports with its companions in a curiously kitten-like manner

It is extremely active with its fore-paws, armed as they are with their long claws, and scratches in a very absurd and amusing manner at anything that may take its attention. It is a very agile climber, running over the bars of its cage and up the tree-branches with great ease and rapidity, and can spring upon an object from some distance, and with admirable accuracy of aim. The eye of this animal is of a light brown, and very brilliant.

THE RIGHT-HAND figure upon the same engraving represents the GARANGAN, or Javanese Ichneumon. As is evident by the name, it is an inhabitant of Java. In size it equals the last mentioned animal. Its color is nearly uniform, and consists of a bright rich chestnut on the body, and a lighter fawn color on the head, throat, and under parts of the body.

This little animal is found in great numbers inhabiting the teak forests, where it finds ample subsistence in the snakes, birds, and small quadrupeds. The natives assert—whether

truly or not—that when it attacks a snake it employs a ruse similar to that which is often used by a horse when it objects to being saddled. It is said to puff up its body, and to induce the snake to twine itself round its inflated person. It then suddenly contracts itself, slips from the reptile's coils, and darts upon its neck. There is some foundation for this assertion in the fact that the Garangan, in common with others of the same genus, does possess the power of inflating and contracting its body with great rapidity; so much so, indeed, that during life it is not easy to measure the creature.

Although it is tolerably susceptible of education, it is rarely kept tame by the natives, because it is liable to occasional fits of rage, and when thus excited can inflict very painful wounds with its sharp teeth. Moreover, it is too fond of poultry to be trusted near the hen-roosts.

THE URVA is easily distinguished from the preceding and the following animals by the narrow stripe of long white hairs that runs from the angle of the mouth to the shoulders, contrasting very decidedly with the grayish-brown tint of the rest of the fur. Some very faintly

URVA, OR CRAB-EATING ICHNEUMON.—*Herpestes cancrivorus.*

marked darker bars are drawn on the body, and the tail is marked with three or four faint transverse bars. This member is more bushy at the base than towards the extremity. The feet and legs are of a uniform dark tint.

THE ICHNEUMONS appear to be the very reptiles of the mammalian animals, in form, habits, and action, irresistibly reminding the spectator of the serpent. Their sharp and pointed snout, narrow body, short legs, and flexible form, permit them to insinuate themselves into marvellously small crevices, and to seek and destroy their prey in localities where it might well deem itself secure. There are many species of the genus Herpestes, or "creeper," one of which, the Garangan, has already been mentioned.

The common Ichneumon, or Pharaoh's Rat, as it is popularly but most improperly termed, is plentifully found in Egypt, where it plays a most useful part in keeping down the numbers of the destructive quadrupeds and the dangerous reptiles. Small and insignificant as this animal appears, it is a most dangerous foe to the huge crocodile, feeding largely upon its eggs, and thus preventing the too rapid increase of these fierce and fertile reptiles. Snakes, rats, lizards, mice, and various birds, fall a prey to this Ichneumon, which will painfully track its prey to its hiding-place, and wait patiently for hours until it makes its appearance, or will quietly creep up to the unsuspecting animal, and flinging itself boldly upon it destroy it by rapid bites with its long sharp teeth.

Taking advantage of these admirable qualities, the ancient Egyptians were wont to tame the Ichneumon, and permit it the free range of their houses, and on account of its habits paid it divine honors as an outward emblem of the Deity considered with regard to His sin-destroying mercy. There is much more in the symbolization of those old Egyptians than we deem, and they looked deeper into the character and the causes of outward forms than we generally suppose. Although the diminutive size of this creature renders it an impotent enemy to so large and well mailed a reptile as the crocodile, yet it causes the destruction of innumerable crocodiles annually by breaking and devouring their eggs. The egg of the crocodile is extremely small, when the size of the adult reptile is taken into consideration, so that the Ichneumon can devour several of them at a meal.

The color of this animal is a brown, plentifully grizzled with gray, each hair being ringed alternately with gray and brown. The total length of the animal is about three feet three

ICHNEUMON.—*Herpestes ichneumon.*

inches, the tail measuring about eighteen inches. The scent-gland of the Ichneumon is very large in proportion to the size of its bearer, but the substance which it secretes has not as yet been held of any commercial value. The claws are partially retractile.

THE MOONGUS, sometimes called the INDIAN ICHNEUMON, is, in its Asiatic home, as useful an animal as the Egyptian Ichneumon in Africa. In that country it is an indefatigable destroyer of rats, mice, and the various reptiles, and is on that account highly valued and protected. Being, as are Ichneumons in general, extremely cleanly in manners, and very susceptible of domestication, it is kept tame in many families, and does good service in keeping the houses clear of the various animated pests that render an Indian town a disagreeable and sometimes a dangerous residence.

In its customs it very much resembles the cat, and is gifted with all the inquisitive nature of that animal. When first introduced into a new locality it runs about the place, insinuating itself into every hole and corner, and sniffing curiously at every object with which it comes in contact. Even in its wild state it exhibits the same qualities, and by a careful observer may be seen questing about in search of its food, exploring every little tuft of vegetation that comes in its way, running over every rocky projection, and thrusting its sharp snout into every hollow. Sometimes it buries itself entirely in some little hole, and when it returns to light drags with it a mole, a rat, or some such creature, which had vainly sought security in its narrow domicile.

While eating, the Ichneumon is very tetchy in its temper, and will very seldom endure an interruption of any kind. In order to secure perfect quiet while taking its meals, it

generally carries the food into the most secluded hiding-place that it can find, and then commences its meal in solitude and darkness. The color of the Moongus is a gray liberally frecked with darker hairs, so as to produce a very pleasing mixture of tints. It is not so large an animal as its Egyptian relative.

THE MOONGUS.—*Herpestes griseus.*

THE grizzled markings upon the fur of the NYULA are of a singularly beautiful character, and form a closely set zigzag pattern over the entire surface of the head, body, and limbs.

The pattern is very like that which is seen in some woven fabrics, or fine basket-work. Upon the back and body this pattern is tolerably large, but upon the head it becomes gradually smaller, and upon the upper portion of the nose is almost microscopically small, though as perfect and uniform as that upon the body, so that it is among the most elegantly colored examples of the Ichneumons. The paws are dark, and devoid of that pretty variegation which extends over the upper surface of the animal.

The word Ichneumon is Greek, and literally signifies a "tracker."

MEERKAT.—*Cynictis levaillantii.*

VERY CLOSELY allied to the Ichneumon, but differing from it in several points, the MEERKAT has been placed in the same genus with that animal by Cuvier and others, but has been separated by later naturalists, because there are only four toes on the hinder feet, and the

number of the teeth is not the same. On account of the color of its fur, it has been termed the Ruddy Ichneumon; and, from the brindlings in the tail, the Pencilled Ichneumon. It is rather a pretty animal, the tint of its coat being a light tawny brown, and the paws dark. The tail is rather bushy, and brindled with black hairs. It is a native of Southern Africa, and has received its specific title in compliment to the well-known African traveller, Le Vaillant.

THE CURIOUS animal which is known by the name of KUSIMANSE, or MANGUE, is a native of Sierra Leone and Western Africa.

It is plantigrade in its walk, and has five toes on each feet. The teeth are of the same description as those of the succeeding animal. Its nose has something of the proboscis in its character, and its ears are small. The food of the Kusimanse consists of the smaller mammalia, of various insects, and some kinds of fruits. The general color of the animal is a deep ruddy brown, but in certain lights, and when its coat is at all ruffled, the chocolate brown of its fur becomes plentifully grizzled with yellowish white. The reason for this change of tint is, that each hair is marked alternately with white and brown.

ZENICK.—*Rhyzaena tetradactyla.*

THE ZENICK, sometimes termed the SURICATE, is a native of Southern Africa, but not very commonly found. It is not so exclusively carnivorous as the preceding animals, being fond of sweet fruits as well as of an animal diet. It is rather a small animal, measuring about eighteen inches in total length, its tail being six inches long. The feet are armed with long and stout claws, by means of which the creature can burrow with some rapidity. The color is grayish brown, with a tinge of yellow, and the upper surface of the body is covered by several obscurely marked bars of a deeper brown hue. A silvery tint is washed over the limbs. The tail is brown, tinged with red, and black at the extremity. A few indistinct spots are sparsely scattered over the breast. The height of the animal is rather more than six inches.

The brain is large in proportion to the size of the animal, and, as may be expected, the creature is remarkably docile and intelligent. It is very sensitive to kindness, and equally so to harsh treatment, showing great affection towards those who behave well towards it, and biting savagely at any one who treats it unkindly. When domesticated it ranges the house at will, and cannot be induced to leave its home for a life of freedom. Like the Ichneumon, it is an useful inmate of a house, extirpating rats, mice, and other living nuisances. It is offended by a brilliant light, and is best pleased when it can abide in comparative darkness. This nocturnal habit of eye renders it especially useful as a vermin exterminator, as it remains quiet during the hour while the rats, mice, and snakes lie still in their holes, and only issues from its hiding-place when the shades of night give the signal for the mammalian and reptilian vermin to sally forth on their own food-seeking quest. As its eyes are fitted for nocturnal sight, it becomes a terrible enemy to these creatures, creeping quietly upon them, and seizing them before they are aware of its proximity.

As far as is known, the sense of hearing is rather dull, and seems to assist the animal but

little. The Zenick appears to bear some resemblance to our common polecat and ferret; but it is altogether a curious animal, and stands nearly alone in the animal kingdom. Its walk is less gliding than that of the Ichneumons, and it is able to sit upon its hinder legs, and remain in the erect position for some time.

In Borneo, an allied animal is found, which is known in its native country by the title of Mampalon.

The so-called "whisker hairs" which grow from the lips and behind the eyes are extremely long, and the feet are short, and furnished with five toes. When walking, the animal sets the entire sole of its foot on the ground, after the manner called "plantigrade." It is generally found in the neighborhood of rivers. In total length it is about eighteen inches, the tail

MAMPALON.—*Cynogale bennettii.*

measuring nearly seven inches. The snout of this animal is rather long, but at its extremity is blunt and slightly depressed.

Passing by several curious animals, we arrive at the pretty little creature which is known by the name of Nandine.

On account of the double row of spots which run along the body, the Nandine has been dignified with the title of "binotata," or "double-spotted," by almost every naturalist who has woven it into his system, even though the animal itself has been placed by some authors among the Civets, by some among the Ichneumons, and by others among the Paradoxures.

The general color of the fur is a darkish and very rich brown, darker along the back, and lighter on the sides. The tail is covered with blackish rings which are but obscurely defined.

One of the largest examples of this group is the dark, sullen, and sluggish Binturong.

This animal is a native of Malacca, from whence several living specimens and many skins have been brought to this country. The color of the Binturong is a dead black, the hairs being long, coarse, and devoid of that gloss which is so often found upon black animals. The head is gray, and each ear is furnished with a long tuft of black hair. Round the edge of the ears runs a band of whitish gray.

The tail of the Binturong is thickly and heavily formed, longer than the body, and covered with exceedingly bushy hair. In some individuals, the black fur is mixed with white or gray hairs.

It seems to be a very indolent animal, passing the day in sleep, and being with difficulty aroused from its slumbers. When irritated, it utters a sharp fierce growl, shows its teeth, and curls itself up again to sleep. While sleeping, it lies partly on its side, curled round with its head snugly sheltered under its bushy tail. The muzzle of the Binturong is short and sharp, rather turned up at its extremity, and covered with long brown hairs which radiate around the face, and impart a very curious expression to the animal. The eyes are of a dull chestnut, unless the creature is excited, when they flash out with a momentary fire which dies away as soon as the cause is removed.

It is a good climber of trees, being assisted in this task by its tail, which is prehensile at the tip, and capable of grasping an object with some force. When in captivity it seems to prefer a vegetable to an animal diet, and feeds on rice, fruit, and other vegetable productions. But it is fond of eggs, birds, the heads of fowls, and other animal substances, and perhaps is

MASKED PAGUMA.—*Paguma larvata.*

best kept in health by a mixed diet. It enjoys a very excellent appetite, and whether its food be animal or vegetable, consumes an exceedingly large amount in comparison with the size of the consumer.

The length of the Binturong is about two feet six inches, exclusive of the tail, which always equals, and generally exceeds, the body in length. Its height varies from a foot to fifteen inches.

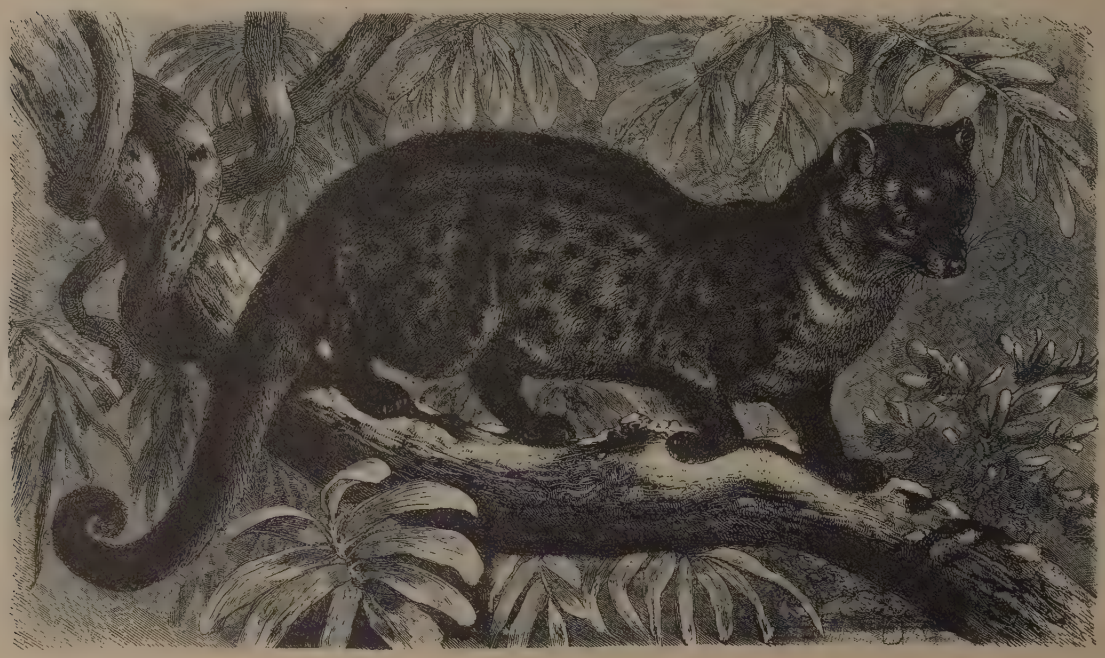
THE CURIOUS animal which is represented in the engraving, has, until lately, been placed among the weasels, under the title of Masked Glutton, and has only of late years been referred to its proper place in the scale of creation. The title of Larvatus, or Masked, is given to it on account of the white streak down the forehead and nose, and the white circle round the eyes, which gives the creature an aspect as if it was endued with an artificial mask. There is a pale olive-gray band extending from the back of each ear and meeting under the throat, and the general color of the fur is an olive-brown, besprinkled and washed with gray. It has been found in China, from which country several specimens have been imported. There are many other species belonging to the same genus, such as the Nepal Paguma, the White Whiskered Paguma of Sumatra and Singapore, the Woolly Paguma from Nepal, and the Three-streaked Paguma of Malacca.

THE ANIMALS which compose the little group of Paradoxures are very closely allied to the Pagumas and the Ichneumons, and appear to be confined to the Asiatic continent and its

islands. The little group of animals to which the Luwack belongs was arranged by Cuvier under the generic title of Paradoxurus, literally, Puzzle-tail, because they have a curious habit of twisting their tails into a tight coil, and in their cat-like claws, and their civet-like teeth, present a strange mixture of characteristics.

The LUWACK, or common Paradoxure, is found plentifully in India, from whence many specimens have been brought to this country. As it has something of the viverrine look about it, Buffon and other naturalists placed it with the Genetts. It is a curious little creature, rather quick in its movements, and very inquisitive in its aspect, holding its head aside with an air of curiosity that is quite amusing. The eyes of this creature are very small and nearly black.

As the Luwack is tolerably widely spread, it is known by various names, according to the locality in which it lives. Its Malabar appellation is Pounougar-Pouné, a term which signifies "Civet Cat." The general tint of the fur is a yellowish black, but it assumes various hues,



LUWACK.—*Paradoxurus typus*

according to the light in which it is viewed. On each side of the spine run three rows of elongated spots, and upon the thighs and shoulders other spots are scattered. But if the animal is viewed in certain lights, the spots on the body seem to be merged into lines, while those on the breast disappear altogether. This change of appearance is caused by the mode in which the hairs are colored, each hair being tipped with a darker hue, and some hairs being totally black. These latter hairs are very silken in texture, and much longer than the yellowish hairs of which the fur is mostly composed.

The Luwack, as are all the Paradoxures, is entirely plantigrade. Its feet are furnished with sharp claws, which are sufficiently retractile to be kept from the ground when the animal walks, and are preserved so sharp, that they can be used for tree-climbing with the greatest ease. Its tail is very remarkable on account of the tight spiral into which it is frequently rolled, and seems to be unlike the tail of any other animals. Although it can be so firmly curled, it is not prehensile, as might be supposed from its aspect when half unrolled.

One of these animals, which was kept in the Paris Museum, was accustomed to sleep during the day, coiled round upon its bed, and even by night appeared to feel a distaste for exertion. When evening came on, it would rouse itself from its slumbers, take food and drink, and again resign itself to sleep.

THE MUSANG of Java is, although a destroyer of rats and mice, rather a pest to the coffee-plantations, which it ravages in such a manner as to have earned the title of the Coffee Rat. It feeds largely upon the berries of the coffee shrub, choosing only the ripest fruit, stripping them of their membranous covering, and so eating them. It is a remarkable fact that the berries thus eaten appear to undergo no change by the process of digestion, so that the natives, who are free from over-scrupulous prejudices, collect the rejected berries, and are thus saved the trouble of picking and clearing them from the husk.

However, the injury which this creature does to the coffee-berries is more than compensated by its very great usefulness as a coffee planter. For, as these berries are uninjured in their passage through the body of the animal, and are in their ripest state, they take root where they lie, and in due course of time spring up and form new coffee plantations, sometimes in localities where they are not expected. It may be that, although the coffee seeds undergo no visible change in the interior of the Musang, they imbibe the animal principle, and thus

MUSANG.—*Paradoxurus fasciatus.*

become more fitted for the soil than if they had been planted without the intermediate agency of the creature.

The Musang is not content with coffee-berries and other vegetable food, although it seems to prefer a vegetable to an animal diet. When pressed by hunger, it seeks eagerly after various small quadrupeds and birds, and is often a pertinacious robber of the hen-roosts.

THE ANIMAL which is known as the HEMIGALE, is remarkable for the singularity of its coloring, and the mode in which the fur is diversified with lighter and darker tints.

The color of this animal's fur is a grayish-brown, on which are placed six or seven large and bold stripes, arranged saddle-wise upon the back, being very broad above, and narrowing to a point towards the ribs. These bands are unconnected with each other. On the top of the head there is a narrow black line, and on each side of the face, a black line runs from the ear to the nose, surrounding the eye in its progress. The nose itself is black. Down the sides of the neck there are some obscure streaks, which are more conspicuous in a side light. The tail is marked with dark patches upon its upper surface, and latter half is black.

The name Hemigale is Greek, and signifies, "Semi-weasel"—and the specific title is given in honor of General Hardwick, who has done such good service to zoology.

THE last of the great Viverrine group of animals is the CRYPTOPROCTA, a creature whose rabbit-like mildness of aspect entirely belies its nature.

It is a native of Madagascar, and has been brought from the southern portions of that wonderful island. It is much to be wished that the zoology of so prolific a country should be

thoroughly explored, and that competent naturalists should devote much time and severe labor to the collection of specimens, and the careful investigation of animals while in their wild state.

Gentle and quiet as the animal appears, it is one of the fiercest little creatures known. Its limbs, though small, are very powerful, their muscles being extremely full and well knit together. Its appetite for blood seems to be insatiable as that of the tiger, and its activity is very great, so that it may well be imagined to be a terrible foe to any animals on whom it may choose to make an attack. For this savage nature it has received the name of "Ferox," or fierce. Its generic name of Cryptoprocta is given to it on account of the manner in which the hinder quarters suddenly taper down and merge themselves in the tail. The word itself is from the Greek, the former half of it signifying "hidden," and the latter half, "hind-quarters."

The color of the Cryptoprocta is a light brown, tinged with red. The ears are very large and rounded, and the feet are furnished with strong claws. The toes are five in number on each foot.

In the foregoing description of the Viverrine animals, examples and figures are given of every remarkable genus which forms a portion of this curious group. Whether or not the Hyena should be considered as belonging to the Viverrines is a question which is still mooted by many naturalists, who think that the Hyenines ought to be ranked as a divergent group of the Civet Cats.

With the exception of one or two species, these creatures are so little known that their habits in a wild state have yet to be fully described. This is the more to be regretted, because the native customs of an animal are more illustrative of its character, and give deeper insight into the part which it plays in the economy of nature, than can be gained by inspecting the same creature when shut up in the contracted space which its cage affords, or when a change in its nature has been wrought by the companionship of human beings. The habits of these agile and graceful animals are so interesting, when watched even in the limited degree which is afforded by our present means of observation, that they give promise of much curious information when noted in the wild freedom of their normal condition.

We lose much valuable knowledge of the habits of a new or scarce animal by the over-readiness of the discoverer to secure his prize. If one is fortunate enough to hit upon an animal which is new to science, or to meet with one which is rarely seen, he would do better service to Zoology by waiting awhile, and quietly watching the manner in which the animal conducted itself, than by hastily levelling his gun, and so giving to science nothing but a lifeless mass of dead matter, instead of a spirited history of a breathing and living being. For my own part, I would rather read in a library a good description of some strange animal, than see in a museum a stuffed skin about which nothing is known.

THE DOG-FAMILY.

DOGS.

The large and important group of animals which is known by the general name of the Dog-Tribe, embraces the wild and domesticated Dogs, the Wolves, Foxes, Jackals, and that curious South-African animal, the Hunting-Dog. Of these creatures, several have been brought under the authority of man, and by continual intermixtures have assumed that exceeding variety of form which is found in the different "breeds" of the domestic Dog.

The original parent of the Dog is very doubtful, some authors considering that it owes its parentage to the Dhole, or the Buansuah; others thinking it to be an offspring of the Wolf; and others attributing to the Fox the honor of being the projenitor of our canine friend and ally. With the exception of a very few spots, the Dog is to be found spread over almost every portion of the habitable globe, and in all countries is the friend of man, aiding him

either by the guardianship of his home and property, by its skill and endurance in the chase, or by affording him a means of transit over localities which no other animal could successfully encounter.

Before proceeding to the domesticated Dogs, we will examine the two species of Wild Dog which nearest approach them.

THE DHOLE, or KHOLSUN, as it is sometimes called, inhabits the western frontiers of British India, its range extending from Midnapore to Chamar, but does not appear to take up its residence in other parts of the same great country. Even in the localities which are favored by its presence, the Dhole seldom makes its appearance, and by many residents in India has been counted but as a myth of the natives. It is a very shy animal, keeping aloof from man and his habitations, and abiding in the dense dark jungles, which extend for hundreds of miles, and afford little temptation for human beings to enter.

Among the peculiarities of the Dhole's character, its fondness for the chase is perhaps the most remarkable. There is nothing peculiar in the fact that the Dhole unites in large packs and hunts down game, both large and small, because many of the canine race, such as the wolves and others, are known by many and tragical experiences to run down and destroy their prey in like manner. But the Dhole is apparently the only animal that, although individually so far the inferior of its fierce prey, in size, strength, and activity, has sufficient confidence in its united powers, to chase and kill the terrible tiger, maugre his fangs and claws.

From the observations which have been made, it seems that hardly any native Indian animal, with the exception of the elephant and the rhinoceros, can cope with the Dhole; that the fierce boar falls a victim, in spite of his sharp tusks, and that the swift-footed deer fails to escape these persevering animals. The leopard is tolerably safe, because the dogs cannot follow their spotted quarry among the tree branches, in which he fortifies himself from their attacks; but if he were deprived of his arboreal refuge, he would run but a poor chance of escaping with life from the foe. It is true that, in their attack upon so powerfully armed animals as the tiger and the boar, the pack is rapidly thinned by the swift blows of the tiger's paw, or the repeated stabs of the boar's tusks; but the courage of the survivors is so great, and they leap on their prey with such audacity, that it surely yields at last from sheer weariness and loss of blood.

It is probable that the sanguinary contests which often take place between the Dholes and their prey have a great effect in checking the increase of the former animals, and that, if such salutary influence were not at work, these bold and persevering hunters might increase to such an extent as to become a serious pest to the country.

In the chase, the Dhole is nearly silent, thus affording a strong contrast to the cheerful tongue of the foxhound in "full cry," or the appalling howl of the wolf when in pursuit of a flying prey. Only at intervals is the voice of the Dhole heard, and even then the animal only utters a low, anxious whimper, like that of a Dog which has lost its master, or feels uneasy about its task. It is a swift animal in the chase, and Captain Williamson, who has seen it engaged in pursuit of its prey, thinks that no animal could lead the Dhole a long chase. The average number of individuals in the pack is about fifty or sixty.

The color of the Dhole is a rich bay, darkening upon the feet, ears, muzzle, and tip of the tail. In height it equals a rather small greyhound. It does not assault human beings unless it be attacked, neither does it seem to fly from them, but in case of a sudden meeting, pursues its avocations as if unconscious of the presence of an intruder. The countenance of this animal is very bright and intelligent, chiefly owing to the keen and brilliant eye with which it is favored. The Greek word "Cuon" signifies a hound.

IN the Wild Dog, which ranges Nepal and the whole of Northern India, the primitive type of the Dog was thought to be found. This animal, the BUANSUAH, presents many points of similarity to the Dhole, and is said to rival the latter creature in its tiger-killing propensities.

Like the Dhole, it is a shy animal, and never willingly permits itself to be seen, preferring

to take up its residence in the thickest coverts which are afforded by the luxuriant vegetation of its native land. It hunts in packs, but, unlike the preceding animal, gives tongue continually as it runs, uttering a curious kind of bark, which is quite distinct from the voice of the domestic Dog, and yet has nothing in common with the prolonged howl of the wolf, the jackal, or the foxes.

The number of individuals in each pack is not very great, from eight to twelve being the usual average. They are possessed of exquisite powers of scent, and follow their game more by the nose than by the eye.

When captured young, the Buansuah readily attaches itself to its keeper, and, under his tuition, becomes a valuable assistant in the chase. Unfortunately, the Dog will too often

BUANSUAH.—*Canis primævus.*

refuse its confidence to any one except its keeper, and therefore is not so useful as it might otherwise be rendered. It is probable that the keeper himself has some hand in this conduct, and willfully teaches his charge to repel the advances of any person save himself.

In the chase of the wild boar, the peculiar character of the Buansuah exhibits itself to great advantage, as its wolf-like attack of sudden snap is more destructive to its prey than the bite of an ordinary hound. For other game this creature is but an uncertain assistant, as it will often give up a chase just at the critical moment, and is too apt to turn aside from its legitimate quarry for the purpose of immolating a tame sheep or goat.

All the various Dogs which have been brought under the subjection of man are evidently members of one single species, *Canis familiaris*, being capable of mixture to an almost unlimited extent. By means of crossing one variety with another, and taking advantage of collateral circumstances, such as locality, climate, or diet, those who have interested themselves in the culture of this useful animal have obtained the varied forms which are so familiar to us. In general character, the groups into which domesticated Dogs naturally fall are tolerably similar, but the individual characters of Dogs are so varied, and so full of interest,

that they would meet with scanty justice in ten times the space that can be afforded to them in these pages. It has been thought better, therefore, to occupy the space by figures and descriptions of the chief varieties of the domesticated Dog, rather than to fill the pages with anecdotes of individuals. Upwards of forty varieties of the Dog will be described in the following pages, and illustrated with figures which, in almost every instance, are portraits of well-known animals.

One of the most magnificent examples of the domesticated Dog is the THIBET DOG, an animal which, to his native owners, is as useful as he is handsome, but seems to entertain an invincible antipathy to strangers of all kinds, and especially towards the face of a white man. These enormous Dogs are employed by the inhabitants of Thibet for the purpose of guarding

THIBET DOG.—*Canis familiaris molossus tibetanus.*

their houses and their flocks, for which avocation their great size and strength render them peculiarly fit. It often happens that the male inhabitants of a Thibetian village leave their homes for a time, and journey as far as Calcutta, for the purpose of selling their merchandise of borax, musk, and other articles of commerce. While thus engaged, they leave their Dogs at home, as guardians to the women and children, trusting to the watchfulness of their four-footed allies for the safety of their wives and families.

The courage of these huge Dogs is not so great as their size and strength would seem to indicate, for, excepting on their own special territories, they are little to be feared, and even then can be held at bay by a quiet, determined demeanor. Their color is generally a deep black, with a slight clouding on the sides, and a patch of tawny over each eye. The hanging lips of the Thibet Dog give it a very curious aspect, which is heightened by the generally loose mode in which the skin seems to hang on the body.

THE GREAT DANISH DOG is best known as the follower of horses and carriages upon roads; and, probably on account of being restricted to this monotonous mode of existence, is supposed to be rather a stupid animal. As, however, in its own country the Danish Dog

is employed as a pointer, and does its work very creditably, we may suppose that the animal is possessed of abilities which might be developed by any one who would take pains to do so.

On account of its carriage-following habits, it is popularly called the Coach Dog, and, on account of its spotted hide, receives the rather ignoble title of Plum-Pudding Dog. The height of the animal is rather more than two feet.

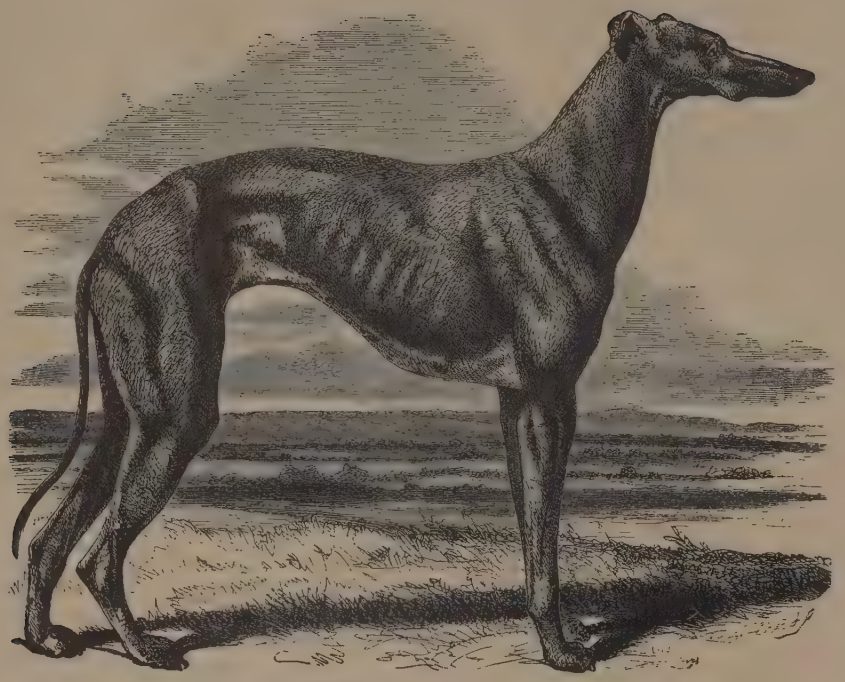
GREAT DANISH DOG.—*Canis familiaris danicus.*

It is hardly possible to conceive an animal which is more entirely formed for speed and endurance than a well-bred Greyhound. Its long slender legs, with their whipcord-like muscles, denote extreme length of stride and rapidity of movement; its deep, broad chest, affording plenty of space for the play of large lungs, shows that it is capable of long-continued exertion; while its sharply pointed nose, snake-like neck, and slender, tapering tail, are so formed as to afford the least possible resistance to the air, through which the creature passes with such exceeding speed.

The chief use—if use it can be termed—of the Greyhound, is in coursing the hare, and exhibiting in this chase its marvellous swiftness, and its endurance of fatigue.

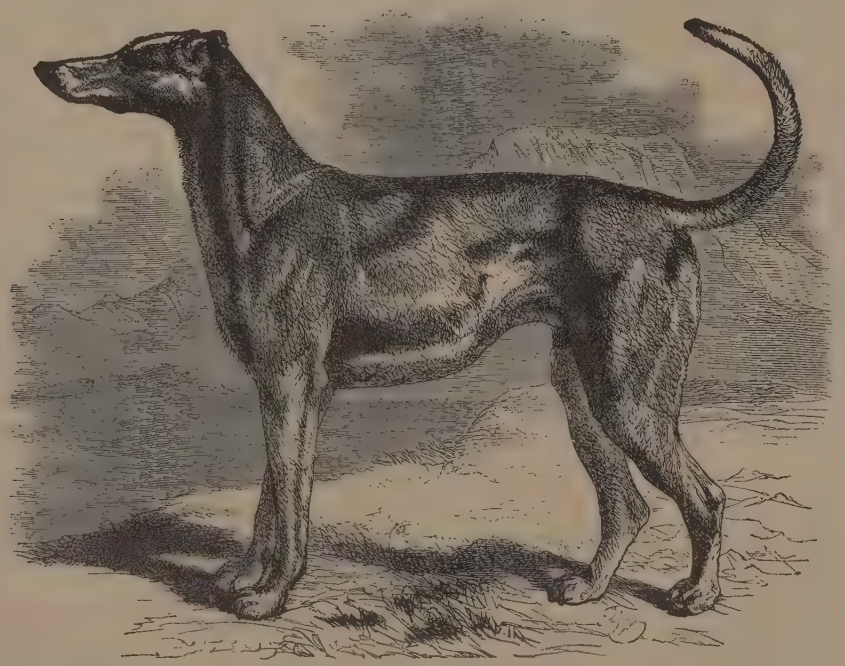
In actual speed, the Greyhound far surpasses the hare, so that if the frightened chase were to run in a straight line, she would be soon snapped up by the swifter hounds. But the hare is a much smaller and lighter animal than her pursuer, and, being furnished with very short forelegs, is enabled to turn at an angle to her course without a check, while the heavier and longer limbed Greyhounds are carried far beyond their prey by their own impetus, before they can alter their course, and again make after the hare.

On this principle, the whole of coursing depends; the hare making short quick turns, and



GREYHOUND.—*Canis familiaris.*

the Greyhounds making a large circuit every time that the hare changes her line. Two Greyhounds are sent after each hare, and matched against each other, for the purpose of trying



IRISH GREYHOUND.—*Canis familiaris.*

their comparative strength and speed. Some hares are so crafty and so agile, that they baffle the best hounds, and get away fairly into cover, from whence the Greyhound, working only by sight, is unable to drive them.

Naturally, the Greyhound of pure blood is not possessed of a very determined character, and it is therefore found necessary to give these creatures the proper amount of endurance by crossing them with the bull-dog, one of the most determined and courageous animals in existence. As may be supposed, the immediate offspring of a bull-dog and a Greyhound is a most ungainly animal, but by continually crossing with the pure Greyhound, the outward shape of the thick and sturdy bull-dog is entirely merged in the more graceful animal, while his stubborn pertinacity remains implanted in its nature.

The skeleton of the Greyhound is a curious one, and when viewed from behind, bears a marvellous resemblance to that of the ostrich.

The narrow head and sharp nose of the Greyhound, useful as they are for aiding the progress of the animal by removing every impediment to its passage through the atmosphere, yet deprive it of a most valuable faculty, that of chasing by scent. The muzzle is so narrow in proportion to its length, that the nasal nerves have no room for proper development, and hence the animal is very deficient in its powers of scent. The same circumstance may be noted in many other animals.

THE IRISH GREYHOUND is a remarkably fine animal, being four feet in length, and very firmly built. Its hair is of a pale fawn color, and much rougher than that of the smooth English Greyhound.

Unless excited by the sight of its game, or by anger, it is a very peaceable animal; but when roused, exhibits a most determined spirit. In former days, when wolves and wild boars infested the Irish forests, this Dog was used for the purpose of extirpating those animals; but in these days their numbers are comparatively few. When fighting, it takes its antagonist by the back, and shakes the life out of its foe by main strength. One of these dogs measured sixty-one inches in total length; twenty-eight and a half inches from the toe to the top of the shoulder, and thirty-five inches in girth.

THE SCOTCH GREYHOUND is still rougher in its coat than its Irish relative, but hardly so large in its make: a very fine example of these Dogs, of the pure Glengarry breed, measures twenty-eight inches in height, and thirty-four inches in girth, being a little smaller than the Irish Dog which was mentioned above.

There seems to be but one breed of the Scotch Greyhound, although some families are termed Deerhounds, and others are only called Greyhounds. Each, however, from being constantly employed in the chase of either deer or hare, becomes gradually fitted for the pursuit of its special quarry, and contracts certain habits which render it comparatively useless when set to chase the wrong animal. The Scotch Deerhound is possessed of better powers of scent than the Greyhound, and in chasing its game depends as much on its nose as on its eyes. And it is curious too, that although it makes use of its olfactory powers when running, it holds its head higher from the ground than the Greyhound, which only uses its eyes.

THE RUSSIAN GREYHOUND is also gifted with the power of running by scent, and is employed at the present day for the same purposes which Irish Greyhounds subserved in former times.

Many Russian forests are infested with wild boars, wolves, and bears, and this powerful and swift Dog is found of great use in the destruction of these quadrupedal pests. In size it is about equal to the Scotch Greyhound. It is not exclusively used for the chase of the large and savage beasts, but is also employed in catching deer, hares, and other animals which come under the ordinary category of "game."

The fur of this Dog is thick, but does not run to any length.

THE NOBLE and graceful animal which is the representative of the Greyhound family in Persia, derives its origin from a source which is hidden in the mists of antiquity, and has been employed in the chase of swift-footed animals from time immemorial. Powerful of jaw, quick and supple of limb, the PERSIAN GREYHOUND is chosen to cope with that swift and daring

animal, the wild ass, as well as with the no less rapid antelope, and the slower, but more dangerous, wild boar.

Of all these creatures, the wild ass gives the most trouble, for it instinctively keeps to rocky and mountainous neighborhoods, which afford a refuge unassailable by the sure-footed Persian horse, and from which it can only be driven by such agile creatures as the native Greyhounds. So untiring is the wild ass, and so boldly does it traverse the rocky mountain spurs among which it loves to dwell, that a single ass will frequently escape, even though several relays of Greyhounds have been provided to take up the running at different parts of the course, as soon as their predecessors are fatigued.

For the antelope the Greyhound would be no match, and is therefore assisted by the falcon, which is trained to settle on the head of the flying animal, and by flapping its wings in

ITALIAN GREYHOUND.—*Canis familiaris grajus italicus.*

the poor creature's eyes, to prevent it from following a direct course, and thus to make it an easier prey to the Greyhound which is following in the track. Of this curious mixture of falconry and hunting the Persian nobles are passionately fond, and peril their lives in ravines, and among rocks that would quail the spirit of our boldest fox-hunters.

It is said that the Persian Greyhound is not the safest of allies, for if it should fail in its chase, it is reputed to turn its wasting energies upon its master, and to force him, Actæon-like, to seek his safety in flight; or, more fortunate than his cornuted prototype, to rid himself of his dependents by a blow from his ready scimitar. The Persian Greyhound is said to be especially addicted to this vice when it is imported into India.

This animal is rather slender in make, and its ears are "feathered" after the fashion of the Blenheim spaniel's ears. Nevertheless, it is a powerful and bold creature, and can hold its own among any assemblage of Dogs of its own weight.

A MORE UTTER contrast to the above-mentioned animal can hardly be imagined than that which is afforded by the ITALIAN GREYHOUND, a little creature whose merit consists in its diminutive proportions and its slender limbs. Hotspur, leaning all breathless on his sword, and stiff with his wounds, was not more entirely the opposite of the carpet knight, with pouncet box to nose, and full of "parmaceti" babblings, than is the rough, fierce Greyhound of Persia, of the delicate, shivering, faint-hearted Italian Greyhound; sad type of the people from which it takes its name.

In truth, the Italian Greyhound is but a dwarfed example of the true smooth Greyhound, dwarfed after the same manner that delights our Celestial friends, when tried on vegetable instead of animal life. The weight of a really good Italian Greyhound ought not to exceed eight or ten pounds; and there are animals of good shape which only weigh six or seven pounds. One of the most perfect Dogs of the present day weighs eight and three-quarter pounds, and is fourteen and a quarter inches in height. His color is uniformly black.

Attempts have been made to employ the Italian Greyhound in the chase of rabbits, but its power of jaw and endurance of character are so disproportioned to its speed, that all such endeavors have failed. A mixed breed, between the Italian Greyhound and the terrier, is useful enough, combining endurance with speed, and perfectly capable of chasing and holding a rabbit.

In this country, it is only used as a petted companion, and takes rank among the "toy-dogs," being subject to certain arbitrary rules of color and form, which may render a Dog worthless for one year through the very same qualities which would make it a paragon of perfection in another. The Dutch tulip-mania afforded no more capricious versatility of criterion than is found in the "points" of toy Dogs of the present day. If the creature be of a uniform color, it must be free from the least spot of white; and even a white stain on the breast is held to deteriorate from its perfection. The color which is most in vogue is a golden fawn; and the white and red Dog takes the last place in the valuation of color.

It is a pretty little creature, active and graceful to a degree, and affectionate to those who know how to win its affections. Even in the breed of the British smooth Greyhounds, this little animal has been successfully employed, and by a careful admixture with the larger Dog, takes away the heavy, clumsy aspect of the head which is caused by the bull-dog alliance, and restores to the offspring the elastic grace of the original Greyhound. It is generally bred in Spain and Italy, and from thence imported into this country, where the change of climate is so apt to affect its lungs, that its owners are forced to keep it closely swathed in warm clothing during the changeable months of the year.

THE large and handsome animal which is called from its native country the NEWFOUNDLAND DOG, belongs to the group of spaniels, all of which appear to be possessed of considerable mental powers, and to be capable of instruction to a degree that is rarely seen in animals.

In its native land the Newfoundland Dog is shamefully treated, being converted into a beast of burden, and forced to suffer even greater hardships than those which generally fall to the lot of animals which are used for the carriage of goods or the traction of vehicles. The life of a hewer of wood is proverbially one of privation, but the existence of the native Newfoundland Dog is still less to be envied, being that of a servant of the wood-hewer. In the winter, the chief employment of the inhabitants is to cut fuel, and the occupation of the Dogs is to draw it in carts. The poor animals are not only urged beyond their strength, but are meagrely fed with putrid salt fish, the produce of some preceding summer. Many of these noble Dogs sink under the joint effects of fatigue and starvation, and many of the survivors commit sad depredations on the neighboring flocks as soon as the summer commences, and they are freed from their daily toils.

In this country, however, the Newfoundland Dog is raised to its proper position, and made the friend and companion of man. Many a time has it more than repaid its master for his friendship, by rescuing him from mortal peril.

Astrologically speaking, the Newfoundland Dog must have been originated under the influence of Aquarius, for it is never so happy as when dabbling in water, whether salt or fresh, and is marvellously endurant of long immersion. There are innumerable instances on record of human beings rescued from drowning by the timely succor brought by a Newfoundland Dog, which seems fully to comprehend the dire necessity of the sufferer, and the best mode of affording help. A Dog has been known to support a drowning man in a manner so admirably perfect, that if it had thoroughly studied the subject, it could not have applied its aiding powers in a more correct manner. The Dog seemed to be perfectly aware that the head of the drowning man ought to be kept above the water, and possibly for that purpose shifted

its grasp from the shoulder to the back of the neck. It must be remembered, however, that all Dogs and cats carry their young by the nape of the neck, and that the Dog might have followed the usual instinct of these animals.

Not only have solitary lives been saved by this Dog, but a whole ship's crew have been delivered from certain destruction by the mingled sagacity and courage of a Newfoundland Dog, that took in its mouth a rope, and carried it from the ship to the shore.

Even for their own amusement, these Dogs may be seen disporting themselves in the sea, swimming boldly from the land in pursuit of some real or imaginary object, in spite of "rollers" and "breakers" that would baffle the attempts of any but an accomplished swimmer. Should a Newfoundland Dog be blessed with a master as amphibious as itself, its happiness is very great, and it may be seen splashing and snapping in luxuriant sport, ever

NEWFOUNDLAND DOG.—*Canis familiaris terræ novæ.*

keeping close to its beloved master, and challenging him to fresh efforts. It is very seldom that a good Newfoundland Dog permits its master to outdo it in aquatic gambols. The Dog owes much of its watery prowess to its broad feet and strong legs, which enable the creature to propel itself with great rapidity through the water.

As is the case with most of the large Dogs, the Newfoundland permits the lesser Dogs to take all kinds of liberties without showing the least resentment; and if it is worried or pestered by some forward puppy, looks down with calm contempt, and passes on its way. Sometimes the little conceited animal presumes upon the dignified composure of the Newfoundland Dog, and, in that case, is sure to receive some quaint punishment for its insolence. The story of the big Dog, that dropped the little Dog into the water and then rescued it from drowning, is so well known that it needs but a passing reference. But I know of a Dog, belonging to one of my friends, which behaved in a very similar manner. Being provoked beyond all endurance by the continued annoyance, it took the little tormentor in its mouth, swam well out to sea, dropped it in the water and swam back again.

Another of these animals, belonging to a workman, was attacked by a small and pugnacious bull-dog, which sprang upon the unoffending canine giant, and, after the manner of bull-dogs, "pinned" him by the nose, and there hung, in spite of all endeavors to shake it off.

However, the big Dog happened to be a clever one, and spying a pailful of boiling tar, he bolted towards it, and deliberately lowered his foe into the hot and viscous material. The bull-dog had never calculated on such a reception, and made its escape as fast as it could run, bearing with it a scalding memento of the occasion.

The attachment which these magnificent Dogs feel towards mankind is almost unaccountable, for they have been often known to undergo the greatest hardships in order to bring succor to a person whom they had never seen before. A Newfoundland Dog has been known to discover a poor man perishing in the snow from cold and inanition, to dash off, procure assistance, telling by certain doggish language of its own of the need for help, and then to gallop back again to the sufferer, lying upon him as if to afford vital heat from his own body, and there to wait until the desired assistance arrived.

I might multiply anecdote upon anecdote of the wondrous powers of this spirited animal, but must pass on to make room for others.

There are two kinds of Newfoundland Dog; one, a very large animal, standing some thirty-two inches in height; and the other, a smaller Dog, measuring twenty-four or twenty-five inches high. The latter animal is sometimes called the Labrador Dog, and sometimes is termed the St. John's Dog. When crossed with the setter, the Labrador Dog gives birth to the Retriever. The large Newfoundland is generally crossed with the mastiff.

There are few Dogs which are more adapted for fetching and carrying than the Newfoundland. This Dog always likes to have something in its mouth, and seems to derive a kind of dignity from the conveyance of its master's property. It can be trained to seek for any object that has been left at a distance, and being gifted with a most persevering nature, will seldom yield the point until it has succeeded in its search.

A rather amusing example of this faculty in the Newfoundland Dog has lately come before my notice.

A gentleman was on a visit to one of his friends, taking with him a fine Newfoundland Dog. Being fond of reading, he was accustomed to take his book upon the downs, and to enjoy at the same time the pleasures of literature and the invigorating breezes that blew freshly over the hills. On one occasion, he was so deeply buried in his book, that he overstayed his time, and being recalled to a sense of his delinquency by a glance at his watch, hastily pocketed his book, and made for home with his best speed.

Just as he arrived at the house, he found that he had inadvertently left his gold-headed cane on the spot where he had been sitting, and as it was a piece of property which he valued extremely, he was much annoyed at his mischance.

He would have sent his Dog to look for it, had not the animal chosen to accompany a friend in a short walk. However, as soon as the Dog arrived, his master explained his loss to the animal, and begged him to find the lost cane. Just as he completed his explanations, dinner was announced, and he was obliged to take his seat at table. Soon after the second course was upon the table, a great uproar was heard in the hall; sounds of pushing and scuffling were very audible, and angry voices forced themselves on the ear. Presently, the phalanx of servants gave way, and in rushed the Newfoundland Dog, bearing in his mouth the missing cane. He would not permit any hand but his master's to take the cane from his mouth, and it was his resistance to the attempts of the servants to dispossess him of his master's property that had led to the skirmish.

It has been mentioned that the Newfoundland Dog is employed during the winter months in dragging carts of hewn wood to their destination, and that it is unkindly treated by the very men who derive the most benefit from its exertions.

The Esquimaux Dog, however, spends almost its entire life in drawing sledges, or in carrying heavy loads, being, in fact, the only beast of burden or traction in the northern parts of America and the neighboring islands. Some, indeed, are turned loose at the beginning of the summer, and many get their living as they can, until winter summons them back again to scanty meals and perpetual toil. But many of the Esquimaux Dogs are retained in servitude for the entire year, and during the summer months are called upon to give their aid in draught

and in carriage. Indeed, those Dogs which are thus kept to their work during the entire year are comparatively happy, for their work is not nearly so heavy as in the winter, and their food is much better.

The Esquimaux Dog is rather smaller than the Labrador, being only twenty-two or twenty-three inches in height. There is something very wolfish about the Dog, owing to its oblique eyes, bushy tail, and elongated muzzle. In its full face the Esquimaux Dog presents

ESQUIMAUX DOGS.

a ludicrously exact likeness of its master's countenance. The color is almost invariably a deep dun, marked obscurely with dark bars and patches; the muzzle is black.

When harnessed to the sledge, the Dogs obey the movements of their leader, who is always a faithful and experienced old Dog. There are no means of guiding the animals in their way, for each Dog is simply tied to the sledge by a leathern strap, and directed by the voice and whip of the driver. The whip is of very great importance to the charioteer, for by the sounds which he elicits from the lash, and by the ably-directed strokes which he aims at refractory Dogs, he guides the canine team without the aid of bit or bridle.

The old and experienced animal which leads the team knows the master's voice, and will dash forward, slacken speed, halt, or turn to right and left at command.

The actual stroke of the whip is used as little as possible, for when a Dog feels the sting of the biting lash, he turns round and attacks the Dog nearest to him. The others immediately join in the fight, and the whole team is thrown into admirable confusion, the traces being entangled with each other, and the sledge in all likelihood upset. When such a rupture occurs, the driver is generally forced to dismount, and to harness the Dogs afresh. Usually, the leading Dog is permitted to run his own course, for he is able to follow the right path with marvellous accuracy, and to scent it out, even when the thickly-falling snowflakes have covered the surface of the ground with an uniform white carpet, on whose glittering surface no impress is left of the subjacent earth.

These Dogs are able to travel for very great distances over the snow-clad regions of the north, and have been known to make daily journeys of sixty miles for several days in succession.

Captain Parry, in his well-known "Journal," remarks very happily, that "neither the Dog nor his master is half civilized or subdued," the former indeed being the necessary consequence of the latter. The Esquimaux bears no love towards his Dogs, and only looks upon them as animated machines, formed for the purpose of conveying him and his property from one place to another. He is a most exacting and cruel master, feeding scantily his Dogs on the merest offal, and then inflicting severest torture upon them if they break down in their work from want of nourishment, or if, incited by the pangs of hunger, they obey their natural instincts, and make a meal on the provisions which had been laid aside for his own use. The savage is ever ingenious in the art of torture, and the Esquimaux forms no exception to the rule.

The poor beasts have been known, when suffering from long-continued hunger, to devour their tough leather harness, and, as if excited by the imperfect meal, to fly upon the weaker members of the team, and to tear them to pieces. During this paroxysm of unrestrained fury, they would have made their masters their first victims, had they not been driven back by the sword and the bludgeon.

In consequence of the evil treatment to which they are subjected, the poor animals can have no affection for their cruel tormentors, and are afforded no opportunity for developing the mental qualities which they possess in very large degree. When placed under the care of a kind master, the Esquimaux Dog is a most affectionate animal, and displays considerable reasoning powers.

The Esquimaux Dog is rather larger than an English pointer Dog, although its true size appears to be less than it really is, on account of the comparative shortness of limb. Its fur is composed of a long outer covering of coarse hair, three or four inches in length, and an inner coating of short, woolly hair, that seems to defend the animal from the colds of winter. When the weather begins to wax warm, the wool falls off, and grows again as the winter draws near.

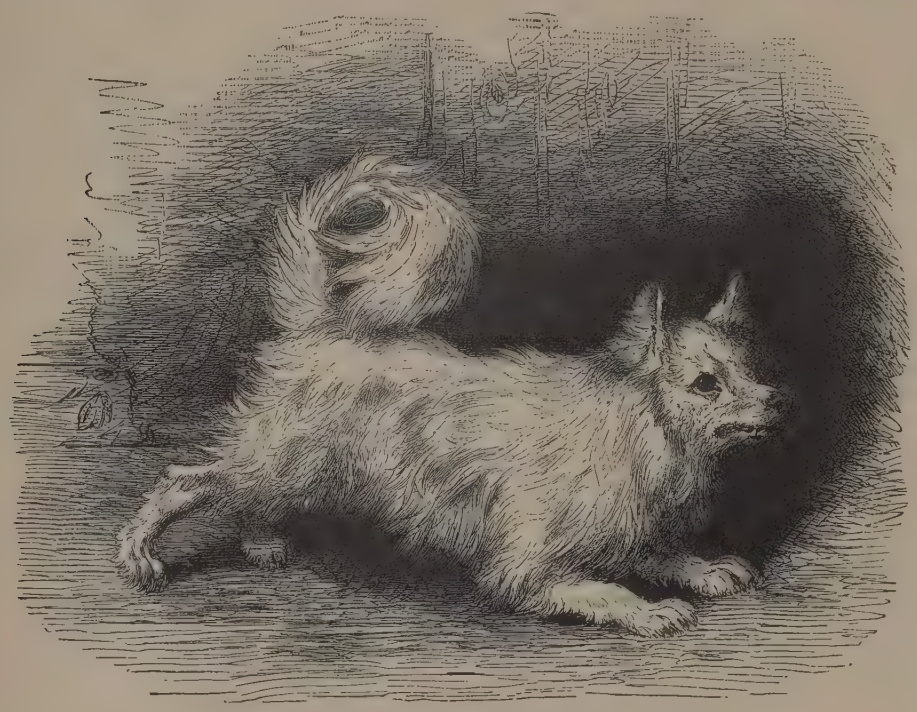
Of late years, a Dog which much resembles the last-mentioned animal has come into fashion as a house-dog, or as a companion. This is the Pomeranian Fox Dog, commonly known as the "Loup-loup."

It is a great favorite with those who like a Dog for a companion, and not for mere use, as it is very intelligent in its character, and very handsome in aspect. Its long white fur, and bushy tail, give it quite a distinguished appearance, of which the animal seems to be thoroughly aware. Sometimes the coat of this animal is a cream color, and very rarely is deep black. The pure white however, seems to be the favorite. It is a lively little creature, and makes an excellent companion in a country walk.

Of the Spaniel Dogs, there are several varieties, which may be classed under two general heads namely, Sporting and Toy Spaniels; the former being used by the sportsman in finding game for him; and the latter being simply employed as companions.

The Field Spaniel is remarkable for the intense love which it bears for hunting game,

and the energetic manner in which it carries out the wishes of its master. There are two breeds of Field Spaniels, the one termed the "Springer," being used for heavy work among thick and thorny coverts, and the other being principally employed in woodcock shooting, and called in consequence the "Cocker." The Blenheim and King Charles Spaniels derive their origin from the Cocker. Some of these Dogs continually give tongue while engaged in the pursuit of game, and utter different sounds according to the description of game which they have reached; while others are perfectly mute in their quest. Each of these qualities is useful in its way, and the Dog is valued accordingly; only it is needful that if the Dog be one that gives tongue, it should not be too noisy in its quest, and should be musical in its note.



POMERANIAN DOG.—*Canis familiaris domesticus pomeranus.*

While hunting, the Spaniel sweeps its feathery tail rapidly from side to side, and is a very pretty object to any one who has an eye for beauty of movement. It is a rule that, however spirited a Spaniel may be, it must not raise its tail above the level of its back. For the purpose of sport, a Spaniel must be possessed of a thick coat, as it is subject to continual wetting from the dripping coverts through which it has to force its way. It should be also a tolerably large Dog, not weighing less than fourteen pounds, if possible, and may with advantage weigh some thirty or forty pounds, as do the breed known by the name of the "Clumber" Spaniels. These last-mentioned animals work silently.

THE COCKER is altogether a smaller animal, seldom weighing above twenty pounds, and very often being only ten or twelve pounds in weight. It is an active and lively animal, dashing about its work with an air of gay enjoyment that assists materially in enlivening the spirits of its master. There are many breeds of this Dog, among which the English, Welsh, and Devonshire Cockers may be mentioned as well-known examples.

It is a courageous little creature, retaining its dashing boldness even when imported into the enervating Indian climate, which destroys the spirit of most Dogs, and even reduces the stubborn bull-dog to a mere poltroon. Captain Williamson, in his book of "Oriental Field Sports," records an instance of rash courage on the part of one of these little Dogs.

"I was shooting near some underwood, rather thinly scattered among reedy grass, growing

on the edges of a large water-course, which took its rise near the foot of the large hill at Muckun Gunge, when suddenly one of a brace of fine cocking Spaniels I had with me ran round a large bush greatly agitated, and apparently on some game which I expected to put up.

"I followed as fast as I could; but Paris, which was the Dog's name, was too quick for me, and before I could well get round the bush, which was about ten yards from the brink of the ravine, had come to a stand, his ears pricked, his tail wagging like lightning, and his whole frame in a seeming state of ecstasy. I expected that he had got a hare under the bank, and, as the situation was in favor of a shot, I ran towards him with more speed than I should have done had I known that instead of a hare I should find, as I did, a tiger sitting on its rump, and staring Paris in the face. They were not above two yards asunder.

"As soon as the Dog found me at his side, he barked, and giving a spring down, dashed at the tiger. What happened for some moments I really cannot say; the surprise and danger which suddenly affected me banished at once that presence of mind which many boast to possess on all emergencies. I frankly confess that my senses were clouded, and that the tiger might have devoured me without my knowing a word of the matter. However, as soon as my fright had subsided, I began, like a person waking from a dream, to look about, and saw the tiger cantering away at about a hundred and fifty yards' distance, with his tail erect, and followed by Paris, who kept barking; but when the tiger arrived at a thick cover, he disappeared.

"I had begun in my mind to compose a requiem for my poor Dog, as I saw him chasing the tiger, which I expected every moment would turn about and let Paris know that he had caught a Tartar. Though Paris had certainly brought me to the gate of destruction, yet he as certainly saved me. I felt myself indebted to him for preservation, and consequently was not a little pleased to see him return safe."

This is not a solitary example of the achievement of so daring a feat. Another officer, belonging to the Bengal Artillery, was shooting near a jungle, and was attended by five or six Spaniels, for the purpose of putting up the bustards, floricans, peafowl, and other birds, when a tiger suddenly showed itself from a spot where it had lain concealed. Instead of retreating from the terrible animal, the Spaniels dashed boldly at the brindled foe, and although several of them were laid prostrate by the tiger's paw, the survivors remained staunch, and attracted the creature's attention so completely that their master was enabled to kill it without difficulty.

The report that the Dhole will attack the tiger is thus corroborated.

From its singular affection for the water, this Dog is termed the Water Spaniel, as a distinction from the Field Spaniel. In all weathers, and in all seasons, the Water Spaniel is ever ready to plunge into the loved element, and to luxuriate therein in sheer wantonness of enjoyment. It is an admirable diver, and a swift swimmer, in which arts it is assisted by the great comparative breadth of its paws. It is therefore largely used by sportsmen for the purpose of fetching out of the water the game which they have shot, or of swimming to the opposite bank of the river, or to an occasional island, and starting therefrom the various birds that love such moist localities.

Much of its endurance in the water is owing to the abundance of natural oil with which its coat is supplied, and which prevents it from becoming really wet. A real Water Spaniel gives himself a good shake as soon as he leaves the river, and is dry in a very short time. This oil, although useful to the Dog, gives forth an odor very unpleasant to human nostrils, and therefore debars the Water Spaniel from enjoying the fireside society of its human friends.

Some people fancy that the Water Spaniel possesses webbed feet, and that its aquatic prowess is due to this formation. Such, however, is not the case. All dogs have their toes connected with each other by a strong membrane, and when the foot is wide and the membrane rather loosely hung, as is the case with the Water Spaniel, a large surface is presented to the water.

The Water Spaniel is of moderate size, measuring about twenty-two inches in height at the shoulders, and proportionately stout in make. The ears are long, measuring from point to point rather more than the animal's height.

THE KING CHARLES SPANIEL derives its name from the "airy monarch," Charles II., who took great delight in these little creatures, and petted them in a manner that verged on absurdity.

It is a very small animal, as a really fine specimen ought not to exceed six or seven pounds in weight. Some of the most valuable King Charles Spaniels weigh as little as five pounds, or even less. These little creatures have been trained to search for and put up game after the manner of their larger relatives, the springers and cockers, but they cannot endure severe exercise, or long-continued exertion, and ought only to be employed on very limited territory.

When rightly managed, it is a most amusing companion, and picks up accomplishments with great readiness. It can be trained to perform many pretty tricks, and sometimes is so appreciative of its human playfellows that it will join their games.

WATER SPANIEL.—*Canis familiaris hirsutus aquatilis.*

I knew one of these animals which would play at that popular boys' game, called "touch," as correctly as any of the boys who used to join in the game, and on account of its small size and great agility was a more formidable opponent than any of the human players. The same Dog carried on a perpetual playful feud with the cat, each seeking for an opportunity of dealing a blow and of getting away as fast as possible. It was most absurd to see the way in which the Dog would hide itself behind a door-step, a scraper, a large stone, or under a thick shrub, and panting with eager expectation, watch the cat walking unsuspiciously towards its ambush. As the cat passed, out shot the Dog, tumbled pussy over, and made off at the top of its speed, pursued by the cat in hot haste, all anxious to avenge herself of the defeat. In these chases the cat always used to run on three legs, holding one paw from the ground as if to preserve its strength in readiness for a severe application to the Dog's ears.

"Prince," for that was the name of this clever little animal, was an accomplished bird's-nester, seldom permitting a too-confiding blackbird or thrush to build its hymeneal home in the neighborhood without robbing it of its variegated contents. When the Dog first discovered how palatable an article of diet was a blackbird's egg, he used to push his nose into the nest and crush the eggs with his teeth, or would try to scrape them out with his paw. In both these methods, he wasted a considerable portion of the liquid contents of the eggs, and

after a while invented a much better mode of action. Whenever he discovered the newly-built nest of a thrush or blackbird, he would wait until there were some four or five eggs in the nest, and then would bite out the bottom of the nest, so as to let the eggs roll unbroken into his mouth.

One of these little animals, which belonged to a gentleman's family, was very clever and docile.

Every morning, he would voluntarily fetch his towel and brush, and stand patiently to be washed, combed, and brushed by the hands of his mistress. Generally, he was accustomed to take his meals with the family, but if his mistress were going to dine from home she used to say to him, "Prince, you must go and dine at the rectory to-day." The Dog would therefore set off for the rectory, rather a long and complicated walk, and after passing several bridges, and taking several turnings, would reach the rectory in time for dinner. There he would wait until he had taken his supper, and if no one came to fetch him, would return as he came.

THE BLENHEIM SPANIEL is even smaller than the King Charles, and resembles it closely in its general characteristics. Both these animals ought to have very short muzzles, long silky hair without any curl, extremely long and silky ears, falling close to the head, and sweeping the ground. The legs should be covered with long silky hair to the very toes, and the tail should be well "feathered." The eyes of these little Dogs are extremely moist, having always a slight lachrymal rivulet trickling from the corner of each eye.

Although, from their diminutive size, these little Dogs are anything but formidable, they are terrible foes to the midnight thief, who cares little for the brute strength of a big yard-dog. Safely fortified behind a door, or under a sofa, the King Charles sets up such a clamorous yelling at the advent of a strange step, that it will disconcert the carefully arranged plans of professional burglars with much more effect than the deep bay and the fierce struggles of the mastiff or the bloodhound. It is easy enough to quiet a large Dog in the yard, but to silence a watchful and petulant King Charles Dog within doors, is quite a different matter. Many "toy" Dogs are equally useful in this respect, and the miniature terrier, which has lately become so fashionable, or the Skye terrier, are most admirable assistants in giving timely warning of a foe's approach, although they may not be able to repel him if he has once made good his entrance.

A VERY celebrated, but extremely rare "toy" Dog, is the MALTESE DOG, the prettiest and most lovable of all the little pet Dogs.

The hair of this tiny creature is very long, extremely silky, and almost unique in its glossy sheen, so beautifully fine as to resemble spun glass. In proportion to the size of the animal, the fur is so long that when it is in rapid movement, the real shape is altogether lost in the streaming mass of flossy hair. One of these animals, which barely exceeds three pounds in weight, measures no less than fifteen inches in length of hair across the shoulders. The tail of the Maltese Dog curls strongly over the back, and adds its wealth of silken fur to the already superfluous torrent of glistening tresses.

It is a lively and very good-tempered little creature, endearing itself by sundry curious little ways to those with whom it is brought in contact. The "toy" spaniels are subject to several unpleasant habits, such as snoring and offensive breath, but the Maltese Dog is free from these defects, and is therefore a more agreeable companion than the King Charles or the Blenheim Spaniels.

As the name implies, it was originally brought from Malta. It is a very scarce animal, and at one time was thought to be extinct; but there are still specimens to be obtained by those who have no objection to pay the price which is demanded for these pretty little creatures.

THE LION DOG, so called on account of its fancied resemblance to the king of beasts, when it is shaven after the fashion of poodles, is a cross between the poodle and the Maltese Dog, possessing the tightly curled hair of the poodle without its elongated ears and determinate aspect.

A VERY decided contrast to the last-mentioned Dog is afforded by the ALPINE SPANIEL, more generally known by the title of the St. Bernard's Dog, on account of the celebrated monastery where these magnificent animals are taught to exercise their wondrous powers, which have gained for them and their teachers a world-wide fame.

These splendid Dogs are among the largest of the canine race, being equal in size to a large mastiff. The good work which is done by these Dogs is so well known that it is only necessary to give a passing reference. Bred among the coldest regions of the Alps, and accustomed from its birth to the deep snows which everlastingly cover the mountain-top, the St. Bernard's Dog is a most useful animal in discovering any unfortunate traveller who has been overtaken by a

ST. BERNARD'S DOG.—*Canis familiaris extrarius st. bernardi.*

sudden storm and lost the path, or who has fallen upon the cold ground, worn out by fatigue and hardship, and fallen into the death-sleep which is the result of severe cold.

Whenever a snow-storm occurs, the monks belonging to the monastery of St. Bernard send forth their Dogs on their errand of mercy. Taught by the wonderful instinct with which they are endowed, they traverse the dangerous paths, and seldom fail to discover the frozen sufferer, even though he be buried under a deep snow-drift. When the Dog has made such a discovery, it gives notice by its deep and powerful bay of the perilous state of the sufferer, and endeavors to clear away the snow that covers the lifeless form.

The monks, hearing the voice of the Dog, immediately set off to the aid of the perishing traveller, and in many cases have thus preserved lives that must have perished without their timely assistance. In order to afford every possible help to the sufferer, a small flask of spirits is generally tied to the Dog's neck.

The illustration which accompanies this notice of the Alpine Spaniel, is a representative of the popular variety of the species.

OF all the domesticated Dogs, the POODLE seems to be, take him all in all, the most obedient and the most intellectual. Accomplishments the most difficult are mastered by this clever animal, which displays an ease and intelligence in its performances that appear to be far beyond the ordinary canine capabilities.

A barbarous custom is prevalent of removing the greater portion of the Poodle's coat, leaving him but a ruff round the neck and legs, and a puff on the tip of the tail as the sole relic of his abundant fur.

Such a deprivation is directly in opposition to the natural state of the Dog, which is furnished with a peculiarly luxuriant fur, hanging in long ringlets from every portion of the head, body, and limbs. The Poodle is not the only Dog that suffers a like tonsorial abridgment of coat; for under the dry arches of the many bridges that cross the Seine, in Paris, may be daily seen a mournful spectacle. Numerous Dogs of every imaginable and unimaginable breed, lie helpless in the shade of the arch, their legs tied together, and their eyes contem-

POODLE.—*Canis familiaris genuinus*

plating with woeful looks the struggles of their fellows, who are being shorn of their natural covering, and protesting with mournful cries against the operation.

THERE is a diminutive variety of the Poodle, which is termed the BARBET. This little Dog is possessed of all the intellectual powers of its larger relative, and on account of its comparatively small size, was formerly in great request as a lady's Dog. For this enviable post it is well fitted, as it is a cleanly little creature, very affectionate, and full of the oddest tricks and vagaries.

Some years since, I made acquaintance with a comical little Dog, named "Quiz," which I believe to have been a Barbet, though no one had ventured definitely to refer the strange little creature to any known variety.

He was very small, not larger than an ordinary rabbit, and was overwhelmed with such a torrent of corkscrew curls that his entire shape was concealed under their luxuriance; and, when he was lying asleep on the sofa, he reminded the spectator of a loose armful of mop thrums. While reposing, his head was quite undistinguishable from his tail; and when walking, his trailing curls collected such an ever-increasing mass of leaves, dry sticks, straws, and other impediments, that he was frequently obliged to halt, in order to be released from his encumbrances.

Casual passengers were constantly arrested in their walk by the singular animated mop that rolled along without any visible means of progression, and I have more than once been witness to a warm dispute respecting the position in nature which the strange animal might occupy. Some thought it *might* be a Dog, while others suggested that it was a young lion; but the prevailing idea referred little Quiz to a position among the bears.

He was a most amusing and clever little animal, readily picking up acquirements, and inventing new accomplishments of his own. He would sit at the piano, and sing a song to his own accompaniment, the manual, or rather the pedal, part of the performance being achieved by a dexterous patting of the keys, and the vocal efforts by a prolonged and modulated howl. He could also "talk," by uttering little yelps in rapid succession.

Like all pet Dogs, he was jealous of disposition, and could not bear that any one, not excepting his mistress, should be more noticed than himself.

When his mistress was ill, he was much aggrieved at the exclusive attention which was given to the invalid, and cast about in his doggish brain for some method of attracting the notice which he coveted. It is supposed that he must have watched the interview between the medical man and patient, and have settled in his mind the attraction which exercised so powerful an influence upon the physician; for just as the well-known carriage drew up to the door, Quiz got on a chair, sat up on his hind legs, and began to put out his tongue, and hold forth his paw, as he had seen his mistress do, and evidently expected to be treated in a similar manner. His purpose was certainly gained, for he attracted universal attention by his *ruse*. He had not patience to keep his tongue out of his mouth, but rapidly thrust it out, and as rapidly withdrew it again.

Poor Quiz died very shortly after I made acquaintance with him, a victim to the cholera, which at that time was rife in Oxford.

THE VERY tiniest of the Dog family is the MEXICAN LAPDOG, a creature so very minute in its dimensions as to appear almost fabulous to those who have not seen the animal itself.

One of these little canine pets is to be seen in the British Museum, and always attracts much attention from the visitors. Indeed, if it were not in so dignified a locality, it would be generally classed with the mermaid, the flying serpent, and the Tartar lamb, as an admirable example of clever workmanship. It is precisely like those white woolen toy Dogs which sit upon a pair of bellows, and when pressed give forth a nondescript sound, intended to do duty for the legitimate canine bark. To say that it is no larger than these toys would be hardly true, for I have seen in the shop windows many a toy Dog which exceeded in size the veritable Mexican Lapdog.

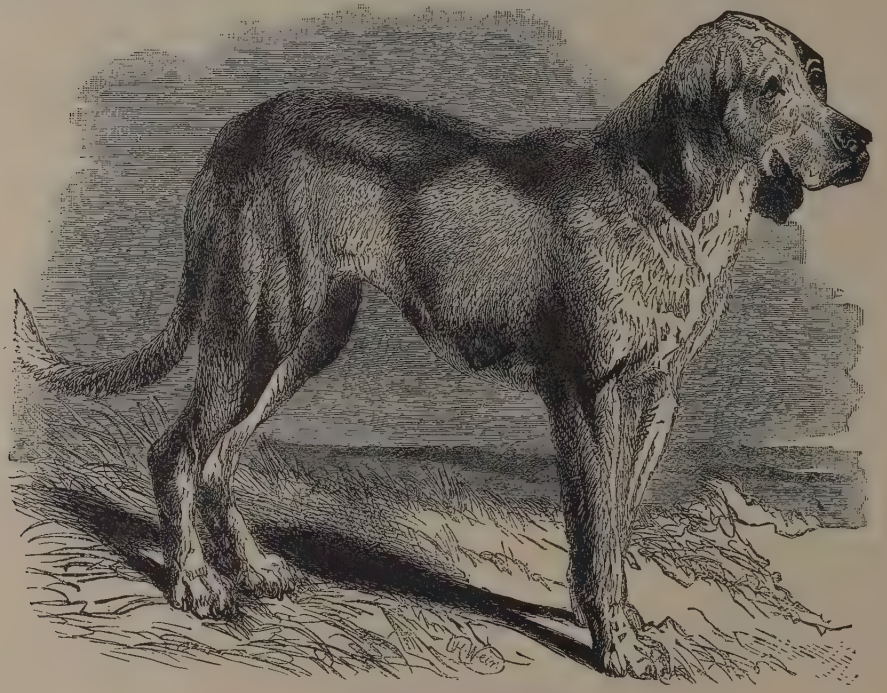
THE MAGNIFICENT animal which is termed the BLOODHOUND, on account of its peculiar facility for tracking a wounded animal through all the mazes of its devious course, is very scarce in England, as there is but little need for these Dogs for its chief employment.

In the "good old times" this animal was largely used by thief-takers, for the purpose of tracking and securing the robbers who in those days made the country unsafe, and laid the roads under a black mail. Sheep-stealers, who were much more common when the offence was visited with capital punishment, were frequently detected by the delicate nose of the BLOODHOUND, which would, when once laid on the scent, follow it up with unerring precision, unravelling the single trail from among a hundred crossing footsteps, and only to be baffled by water or blood. Water holds no scent, and if the hunted man is able to take a long leap into the water, and to get out again in some similar fashion, he may set at defiance the Bloodhound's nose. If blood be spilt upon the track, the delicate olfactories of the animal are blunted, and it is no longer able to follow the comparatively weak scent which is left by the retreating footsteps.

Both these methods have been successfully employed, but in either case great caution is needed. When the hound suspects that the quarry has taken to the water, it swims backward and forward, testing every inch of the bank on both sides, and applying its nose to every leaf, stick, or frothy scum that comes floating by.

In this country the Bloodhound is chiefly employed in deer-shooting, aiding the sportsman by singling out some animal, and keeping it ever before him, and by driving it in certain directions, giving to its master an opportunity for a shot from his rifle. Should the deer not fall to the shot, but be only wounded, it dashes off at a greatly increased pace, followed by the Bloodhound, which here displays his qualities. Being guided by the blood-drops that stud the path of the wounded animal, the hound has an easy task in keeping the trail, and by dint of persevering exertions is sure to come up with his prey at last.

The Bloodhound is generally irascible in temper, and therefore a rather dangerous animal to be meddled with by any one excepting its owner. So fierce is its desire for blood, and so utterly is it excited when it reaches its prey, that it will often keep its master at bay when he approaches, and receive his overtures with such unmistakable indications of anger that he will



BLOODHOUND.—*Canis familiaris.*

not venture to approach until his Dog has satisfied its appetite on the carcass of the animal which it has brought to the ground. When fairly on the track of the deer, the Bloodhound utters a peculiar, long, loud, and deep bay, which, if once heard, will never be forgotten.

The modern Bloodhound is not the same animal as that which was known by the same title in the days of early English history, the breed of which is supposed to be extinct. The ancient Bloodhound was, from all accounts, an animal of extremely irritable temper, and therefore more dangerous as a companion than the modern hound.

The color of a good Bloodhound ought to be nearly uniform, no white being permitted, except on the tip of the stern. The prevailing tints are a blackish-tan, or a deep fawn. The tail of this Dog is long and sweeping, and by certain expressive wavings and flourishings of that member, the animal indicates its success or failure.

Closely allied to the bloodhound is the now rare Staghound, a Dog which is supposed to derive its origin from the bloodhound and the greyhound, the latter animal being employed in order to add lightness and speed to the exquisite scent and powerful limbs of the former. Sometimes the foxhound is used to cross with this animal.

It is a large and powerful Dog, possessed of very great capabilities of scent, and able, like the bloodhound, to hold to the trail on which it is laid, and to distinguish it among the foot-

prints of a crowd. Despite of the infusion of greyhound blood, the Staghound is hardly so swift an animal as might be conjectured from its proportions, and probably on account of its slow pace has fallen into comparative disrepute at the present day. Until the death of George III. the stag-chase was greatly in vogue ; but since that time it has failed to attract the attention of the sporting world, and has gradually yielded to the greater charms of the fox-hunt.

The real old English Staghound is now extremely rare, and is in danger of becoming entirely extinct. The Dog which is now used for the purpose of chasing the stag is simply a very large breed of the foxhound, which, on account of its superior length of limb, is more

STAGHOUND.—*Canis familiaris sagax acceptorius.*

capable of matching itself against the swift-footed deer than the ordinary hound. These Dogs are very powerful when in a good state of health, and have been known to achieve very wonderful feats of speed and endurance. They have been known to run for a distance of fifty miles in pursuit of a stag ; and one memorable run is recorded, where the stag and the only two hounds which kept to its trail, were found dead close to each other. The stag had made one powerful effort, had leaped over a park wall, which the Dogs in their wearied state were unable to surmount, and had fallen dead just as it had gained a place of safety.

It is needful that the Staghound should be a courageous as well as a powerful animal ; for when the stag is brought to bay it becomes a formidable antagonist, dashing boldly at the nearest foe, whether man or Dog, and often inflicting by the stroke of its sharp antlers a mortal wound upon any Dog that may be within its reach. Some degree of cunning is also requisite, so that the Dog may not rush blindly upon its fate, but may craftily watch its opportunity, and seize its quarry without suffering for its boldness.

When the country was more open, and less broken up into fields and enclosures than is the case at the present, stag-hunting was a comparatively easy task, but in the present day, when a

free Englishman can hardly walk half-a-mile without being checked by a wall or fence, or a warning notice, the stag has so much the advantage of the hounds and horses that the chase has gradually sunk into comparative disuse. With one or two exceptions, the royal Stag-hounds are now almost the only representatives of this once popular and exciting sport.

Of all the Dogs which are known by the common title of "hound," the Foxhound is the best known. There are few animals which have received more attention than the Foxhound, and none perhaps which have so entirely fulfilled the wishes of its teachers. A well-known sporting author, who writes under the *nom de plume* of "Stonehenge," remarks, with pardonable enthusiasm, that "the modern Foxhound is one of the most wonderful animals in creation." The efforts which have been made, and the sums which have been spent, in the endeavor to make this animal as perfect as possible, are scarcely credible.

FOXHOUND.—*Canis familiaris.*

Without in the least disparaging any efforts to improve the nature and the character of any animal, we cannot but draw a sad comparison between the unwearying pains that are bestowed upon the condition of the Foxhound, and the neglected state of many a human being in the vicinity of the palatial dog-kennel and the magnificent stables. At one establishment, eight or ten thousand pounds per annum have been expended upon the Dogs and horses, and this for a series of many years. As might be expected, the command of such enormous sums of money, backed by great judgment on the parts of the owners and trainers of hounds, has produced a race of Dogs that for speed, endurance, delicate scent, and high courage, approach as near to absolute perfection as can well be imagined.

By thus improving the condition of the domesticated Dog, the country has been benefited, for it is impossible to improve any inhabitant of a country without conferring a benefit on the land in which it is reared. Still, supposing that half the sums which are annually expended on training Dogs for the amusement of the upper classes had been employed in improving the condition of the uneducated and neglected poor, and had been backed by equal judgment, I cannot but fancy that the country would have received a greater benefit than is conferred upon it by the most admirable pack of hounds that can be conceived.

It is supposed that the modern Foxhound derives its origin from the old English hound, and its various points of perfection from judicious crosses with other breeds. For example, in order to increase its speed, the greyhound is made to take part in his pedigree, and the greyhound having already some admixture of the bull-dog blood, there is an infusion of stubbornness as well as of mere speed.

There are various breeds of Dogs which are remarkable for the very great development of some peculiar faculty, such as speed in the greyhound, courage in the bull-dog, delicacy of scent in the bloodhound, sagacity in the poodle, and so on. So that, when a breed of Dogs begins to fail in any of these characteristics, the fault is amended by the introduction of a Dog belonging to the breed which exhibits the needful quality in greatest perfection. It is remarkable that the mental character is transmitted through a longer series of descendants than the outward form. Even in the case of such widely different Dogs as the bull-dog and the greyhound, all vestige of the bull-dog form is lost in the fourth cross, while the determinate courage of the animal is persistent, and serves to invigorate the character of unnumbered successive progeny.

By using these means with the greatest care and judgment, the modern sportsmen have succeeded in obtaining an animal which is so accurate of scent, that it might almost challenge the bloodhound himself in its power of discovering it, and of adhering to it when found; so determined in character, that it has many a time been known to persevere in its chase until it has fallen dead on the track; and so swift of foot that few horses can keep pace with it in the hunting-field, if the scent be good and ground easy. It is averred by competent authority, that no man can undertake to remain in the same field with the hounds while they are running.

The speed which can be attained by Foxhounds may be estimated from the well-known match which took place upon the Beacon course at Newmarket. The length of the course is 4 miles 1 furlong and 132 yards, and this distance was run by the winning Dog, "Blue-cap," in eight minutes and a few seconds. The famous racehorse, "Flying Childers," in running over the same ground, was little more than half a minute ahead of the hounds. Now, if we compare the dimensions of the horse and the hound, we shall form a tolerably accurate conception of the extraordinary swiftness to which the latter animal can attain. In that match, no less than sixty horses started together with the competitors, but of the sixty only twelve were with the Dogs at the end of this short run.

It must be remembered that, in addition to the severe and unceasing labor of the chase, in which the Dogs are always busily at work, either in searching for a lost scent, or following it up when found, the hounds are forced to undergo no small exertion in walking from their kennel to the "meet," which is frequently at some distance from their home; and then in walking back again when the chase is over.

That the animal should be enabled to perform these severe tasks, which often occur several times weekly, it is necessary that it should not be too large, lest it should fatigue itself with its own bulk, and go through considerable needless exertion in forcing its way through thickets where a lesser Dog would pass without difficulty; and it is equally necessary that it should not be too small, lest it should be unequal to the various impediments which cross its path, and by reason of its shorter limbs be unable to keep up properly with the rest of the pack.

According to the latest authorities, the best average height for Foxhounds is from twenty-one to twenty-five inches, the female being generally smaller than the male. However, the size of the Dog does not matter so much; but it is expected to match the rest of the pack in height as well as in general appearance.

It has been well remarked, by a writer to whom allusion has already been made, that a hound ought not to be looked upon as an individual, but as a component part of a pack, and, therefore, that a Dog which will be almost invaluable in one pack will be quite inadmissible into another. It is a great fault in a Dog to be slower than its companions, but it is a fault of hardly less magnitude to be too fast for them, and to run away at such a pace that it seems to be getting all the hunting to itself. To use an expressive, but conventional term, "suitiness" is one of the principal points in a pack of hounds, which ought to appear as if they all belonged to one family.

In its natural state, the head of the Foxhound has a different aspect from that which is presented by the trained dog. This change of appearance is caused by the custom of cropping, or rather of trimming, the ears, so as to dock them of their full proportions, and to

leave no more of the external organ than is necessary to protect the orifice. It is said that this process is necessary in order to guard the animal's ears from being torn by the brambles and other thorny impediments which constantly come in its path, and through which the Dog is continually forced to thrust itself. But the custom does not seem to confer a corresponding benefit on the poor creature whose ears are subjected to the operator's steel, and it may be that the custom of cropping Dogs' ears will go out of fashion, as is happily the case with the equally cruel practice of cropping the ears of horses, and docking their tails.

This Dog is a sufficiently sagacious animal, and if it were subjected to the influence of man as frequently as the Terrier and other companions of the human race, would not lose by comparison with them. Even in the state of semi-civilization into which these Dogs are brought, their obedience to the voice and gestures of the huntsman is quite marvellous; and even when in their kennel they will come individually to be fed, no Dog venturing to leave its place until its name has been called.

As to the various sporting details connected with this animal, such as breeding, training, feeding, etc., they may be found in many sporting works, where they are elaborately discussed, but are not suitable for a work of the present character.

THE HARRIER, so called because it is chiefly employed in hunting the hare, is in the present day nothing more or less than a small foxhound, the description of the latter animal serving equally for that of the former, with the one exception of size. As has been mentioned in the account of the foxhound, the average height is about twenty-three inches, but the height of the Harrier ought not to exceed eighteen or nineteen inches.

Partly on account of its smaller size, and partly on account of the character of its work, the Harrier is not so swift an animal as the foxhound, and does not test so fully the speed and strength of the horses that follow in its track. It is a swifter animal in these days than was the case some few years back, because in the modern system of hare-hunting, poor "puss" is so rapidly followed by the hounds that she has no time to waste in those subtle contrivances for throwing the hounds off her track for which she is so justly famous, and which have often baffled the efforts of the best and strongest Harriers.

The points of a good Harrier are similar to those of the foxhound, and may be described as follows:

"There are necessary points in the shape of a hound which ought always to be attended to by a sportsman, for if he be not of a perfect symmetry he will neither run fast nor bear much work. He has much to undergo, and should have strength proportioned to it. Let his legs be straight as arrows, his feet round and not too large; his shoulders back; his breast rather wide than narrow; his chest deep; his back broad; his head small; his neck thin; his tail thick and bushy; if he carry it well, so much the better. Such hounds as are out at the elbows, and such as are weak from the knees to the foot, should never be taken into the pack.

"I find that I have mentioned a small head as one of the necessary requisites of a hound; but you will observe that it is relative to beauty only, for as to goodness, I believe that large-headed hounds are in no wise inferior. The color I think of little moment, and am of opinion with our friend Foote, respecting his negro friend, that a good Dog, like a good candidate, cannot be of bad color."

These remarks were written by Beckford, in the year 1779, and are of such sterling value that they are accepted even in the present day as the criteria of a good hound. He proceeds to observe in the same letter from which the above description has been transcribed, that the shape of the Dog's head is as variable as the color of his hide, and that some sportsmen prefer a sharp-nosed hound; while others care nothing for a Dog unless he have a large and roomy head. Each, however, in his opinion, is equally useful in its own way; for "speed and beauty are the chief excellences of the one, while stoutness and tenderness of nose in hunting are characteristic of the other." To these qualifications the modern huntsmen have added another, consisting of depth of the back ribs, in order to secure a stout build, and the capability of enduring daily work for a lengthened period.

Uniformity of size and color is even more requisite in a pack of Harriers than of foxhounds

Such packs indeed are often composed of the latter variety of Dog, which are too small to be admitted into the regular foxhound pack. However, if a pack is composed of these dwarf foxhounds, the two best characters of the true Harrier are lost, namely, the musical tongue and the sensitive nose, and the only compensating quality that these animals possess is extreme speed. A pack of true Harriers is distinguished for the melodious tongues of its members, which can be heard at a distance of several miles, while the delicacy of their scent is so great that they can work out all the complicated doubles of the hare.

THERE are several breeds of the BEAGLE, which are distinguishable from each other by their size and general aspect.

The Medium-sized Beagle is not unlike the harrier, but is heavier about the throat than that animal, and has stouter limbs, and a comparatively larger body. The height of this Dog is from a foot to fourteen or fifteen inches.

BEAGLE.—*Canis familiaris sagax irritans.*

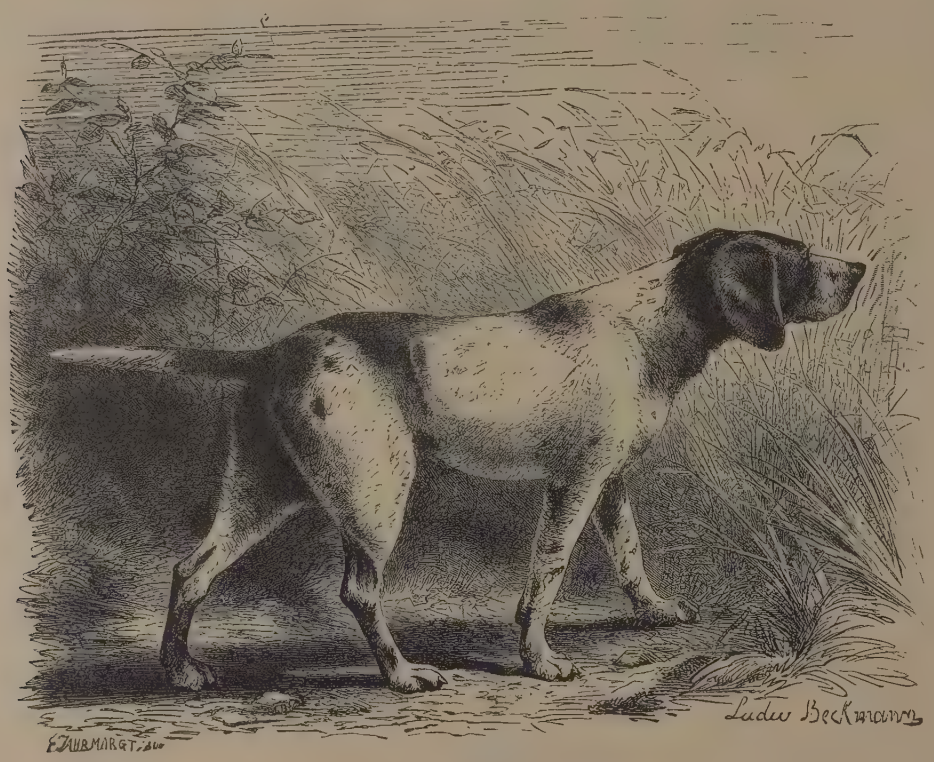
The Rough Beagle is thought to be produced by crossing the original stock with the rough terrier, and possesses the squeaking bark of the terrier rather than the prolonged musical intonation of the Beagle. Some authorities, however, take the animal to be a distinct variety. The nose of this creature is furnished with the stiff whisker-hairs which are found on the muzzle of the rough terrier, and the fur is nearly as stiff and wiry as the terrier's.

The Dwarf Beagle, or Rabbit Beagle, as it is sometimes called, is the smallest of the three animals, delicate in form and aspect, but good of nose and swift of foot. So very small are some of these little creatures that a whole pack has been conveyed to and from the field in hampers slung over the back of a horse, or simply in the shooting pockets of the men. Their strength was thus preserved for the labors of the field, and they were saved from the fatiguing walk to the field and back again. Ten inches is the average height of a Rabbit Beagle.

These little Dogs are chiefly employed by those who hunt on foot, as they are not sufficiently swift to drive the hare from her doubles, and by patiently tracking her through all her wiles, "win like Fabius, by delay." Beagles used to be much in favor with the junior members of the universities, for the purpose of affording a pleasant afternoon's amusement. It is true that the legitimate object of chase, namely, the hare, is seldom forthcoming, but her place is readily supplied by a long-winded lad, who traverses the country at speed, trailing after him a rabbit-skin well rubbed with turpentine or aniseed. If the scent be good, and the course lie tolerably straight, the endurance of the hunter is severely tested, but if the miniature hounds come often to a check, any one of average powers can be in at the finish.

THERE are two breeds of the POINTER, the modern English Pointer, and the Spanish Pointer. The latter of these Dogs is now seldom used in the field, as it is too slow and heavily built an animal for the present fast style of sporting, which makes the Dogs do all the ranging, and leaves to their master but a comparatively small amount of distance to pass over. The nose of this Dog is peculiarly delicate, as may be inferred from its exceedingly wide muzzle, and for those sportsmen who cannot walk fast or far, it is an useful assistant.

As may be seen from the engraving, the modern English Pointer is a very different animal, built on a much lighter model, and altogether with a more bold and dashing air about it. While it possesses a sufficiently wide muzzle to permit the development of the olfactory



POINTER.— *Canis familiaris avicularius.*

nerves, its limbs are so light and wiry that it can match almost any Dog in speed. Indeed, some of these animals are known to equal a slow greyhound in point of swiftness.

This quality is specially useful, because it permits the sportsman to walk forward, at a moderate pace, while his Dogs are beating over the field to his right and left. The sagacious animals are so obedient to the voice and gesture of their master, and are so well trained to act with each other, that at a wave of the hand they will separate, one going to the right and the other to the left, and so traverse the entire field in a series of "tacks," to speak nautically, crossing each other regularly in front of the sportsman as he walks forward.

When either of them scents a bird, he stops suddenly, arresting even his foot as it is raised in the air, his head thrust forward, his body and limbs fixed, and his tail stretched straight out behind him. This attitude is termed a "point," and on account of this peculiar mode of indicating game, the animal is termed the "Pointer." The Dogs are so trained that when one of them comes to a point he is backed by his companion, so as to avoid the disturbance of more game than is necessary for the purpose of the sportsman.

It is a matter of some difficulty to teach their lesson rightly, for the Dogs are quite as liable to error through their over-anxiety to please their master as through sluggishness or carelessness. Such Dogs are very provoking in the field, for they will come to a point at almost every strange odor that crosses their nostrils, and so will stand at pigs, sparrows, cats,

or any other creature that may come in their way, and will hold so firmly to their "point" that they cannot be induced to move, except by compulsory means. This extreme excitability seems to be caused by too close adherence to the same stock in breeding, and is set right by a judicious admixture with another family.

According to "Stonehenge," the marks of a good Pointer are as follows. "A moderately large head, wide rather than long, with a high forehead and an intelligent eye, of medium size. Muzzle broad, with its outline square in front, not receding as in the hound. Flews (*i.e.* the overhanging lips) manifestly present, but not pendent. The head should be well set on the neck, with a peculiar form at the junction only seen in the Pointer. The neck itself should be long, convex in its upper outline, without any tendency to a dewlap or a ruff, as the loose skin covered with long hair round the neck is called. The body is of good length, with a strong loin, wide hips, and rather arched ribs, the chest being well let down, but not in a hatchet shape as in the greyhound, and the depth in the back ribs being proportionably greater than in that Dog. The tail, or 'stern,' as it is technically called, is strong at the root, but, suddenly diminishing, it becomes very fine, and then continues nearly of the same size to within two inches of the tip, where it goes off to a point, looking as sharp as the sting of a wasp, and giving the whole very much the appearance of that part of the insect, but magnified as a matter of course. This peculiar shape of the stern characterizes the breed, and its absence shows a cross with the hound or some other Dog."

The author then proceeds to recommend long, slanting, but muscular shoulder-blades, a long upper arm, a very low elbow, and a short fore-arm. The feet must be round and strong, and padded with a thick sole, the knee strong, and the ankle of full size. The color is of comparatively small importance, but ought, if possible, to be white, so that the animal may be visible while beating among heather, clover, or turnips. Black or liver-colored dogs are very handsome to the eye, but often cause much trouble to the sportsman, on account of the difficulty of distinguishing them among the herbage. White Dogs, with lemon-colored heads, are the favorites of this author.

As the Pointer is seldom in contact with its master, except when in the field, its domestic qualities are rarely prized as they deserve to be. No Dog can be properly appreciated until it is a constant companion of man, and it is probable that many Dogs which are set down as stupid and untractable, are only so called because they have been deprived of the society of human beings, through whom alone their higher qualities can be developed, and have been confined to the kennel, the yard, or the field. The Pointer is but little known as a companion Dog, but when it is in the habit of living constantly with its owner speedily puts forth its intellectual powers, and becomes an amusing and interesting companion. One of my friends has kindly sent me the following account of a Pointer that belonged to him, and had been constantly with his master for a lengthened period of time. The animal was not an example of the thorough-bred Pointer, but was, nevertheless, a very respectable creature.

"I ONCE possessed a Dog whose nose, sight, and instinct were well developed; and as he was my companion for many a day, and my only friend for many months, some of his peculiarities may not be uninteresting.

"The Dog could point a partridge, but he would eat it, too, if he had a chance; and often when I could not take a day's shooting I have observed my Dog doing a little amateur work on his own account. Very successful, also, was he in this occupation; and he frequently dined on a partridge or quail which he had gained by means of his own skill. There was no concealing the fact that he was, however, an arrant coward; and he himself was perfectly conscious of this defect. As is usual amongst men, he endeavored to conceal his weakness by the aid of a formidable exterior; and few who knew him not would ever venture even to insinuate that he was not as brave as a lion. If he happened to encounter any other Dog with which he was unacquainted he would immediately stand perfectly still, raise his tail, and keep it very firmly in one position; he would then elevate the hair on his back, and dragging up his jowls, would exhibit a formidable array of grinders. Thus exhibiting by no means a prepossessing appearance, he would merely growl whilst the other Dog walked round him, and

he thus frequently prevented any liberties from being taken with him. No sooner had his visitor left him than his attitude would change; and with a glance, as much as to say, 'I did that very well,' he would jog along before me. In spite of his warlike positions, he was once terribly punished by a little terrier which resided in a butcher's shambles. Passing this locality, my Dog was set upon before even he had time to study attitudes or to assume a *pose*, so he made good use of his legs, and escaped with a few scratches. Now it happened that amongst his friends he had one which was a well-bred bull terrier, and after the mauling that he had received from the butcher's Dog I noticed that he was very much oftener with this friend than he had been before. The next time that I attempted to take him past the shambles he refused to come, and retreated home. I followed him, and, by dint of whistling, at length brought him out from his retreat, from which he was followed by his friend the bull terrier.

"The two jogged along very pleasantly and cheerfully, my Dog evidently paying marked attention to his friend. When we approached the locality of the shambles my Dog ran along in front, whilst the bull terrier followed behind, and both looked as though 'up' to something. Opposite the shambles the terrier rushed out upon my Dog, which retreated with wonderful precipitancy behind his friend, who at once collared the assailant, and tumbled him over and over to the tune of the joyful barks of my old cur, which had evidently made the preliminary arrangements with his friend for this scene."

The same Dog was once taught a useful lesson in a singular manner. His master is an officer, and during the time when he possessed the Dog was annoyed by its constant intrusion into the mess-room when breakfast was on the table. Nothing could keep the Dog away from the tempting tables with their savory viands, and as each member of the mess was liable to a fine every time that his Dog entered the room it was clear that these pertinacious intrusions must be stopped.

One morning the Dog crept into the room, after its custom, and fortunately there was no one at breakfast except its master. Attracted by the ham and fowls that lay so temptingly on the table, the Dog stealthily approached them, and stood pointing at the longed-for food, with watering mouth and eager eye. Seeing the Dog's attention thus occupied, his master slyly tilted the teapot, so as to let a slender stream of the hot liquid trickle on the Dog's back. At first, its faculties were so absorbed in contemplation of the forbidden dainties, that it only acknowledged the hot liquid by a nervous twitching of the skin. As soon, however, as the fur was saturated, and the full effects of the boiling tea made themselves felt, the Dog sprang up with a yell of astonishment, and dashed howling through the door. Ever after its adventure with the teapot, no inducement could tempt the animal to enter that room, or come fairly within the threshold; and even if a chicken bone were held out as a bait the poor Dog would only lick its lips, and put on a plaintive and beseeching look as an appeal to the humanity of its tempter.

THE DALMATIAN DOG is even better known as a carriage or coach Dog than the Danish Dog, which has already been described and figured. Its shape is very like that of the pointer, but the artificially shortened ears give it a different aspect.

The ground color of this animal's fur is nearly white, and is richly crossed with black spots, earning for it, in common with the Danish Dog, the title of "Plum-pudding." The height of this animal is about twenty-four or twenty-five inches. Some years ago, the Dalmatian Dog was very frequently seen in attendance upon the carriage of its owner, scampering along in high glee by the side of the vehicle, or running just in front of the horses, apparently in imminent danger of being knocked over every moment. Now, however, the creature has lost its hold on the fashionable world, and is but seldom seen.

This animal is seldom if ever permitted to be the constant companion of its master, and has therefore but little of that humanly intelligent look which marks the countenance of the companionable poodle or spaniel, and gives to the animal a certain semblance of its master.

We may see in every country a singular similitude between the human inhabitants of the land and the various animals which tread the same earth and breathe the same air. So we

find that the countries which are the most productive of ferocious animals are most productive of ferocious men:—the Lion of Africa, the Tiger of India, the Grizzly Bear of America, the Polar Bear of the northern regions, being but lower types of the destructive humanity that prevails in those portions of the globe.

As this subtle bond of similar affections is found to pervade the wild animals and the human inhabitants of the same country, it is but natural that when the man and the brute are drawn closer together by domestication, and the higher Being enabled to pour its influence upon the lower, the similarity in their character should be still more apparent.

So we find that, whether in cats, Dogs, or horses, the animals which are most frequently made the companions of man, the disposition of the owner is reflected in the character of the beast. The large-hearted, kind-souled man will be surrounded with loving and gentle animals. His cat will sit and purr upon his shoulder fearless of repulse, his Dog will love and reverence his master with faithful worship, and his horse will follow him about the field in which it is freely grazing, and solicit the kind notice to which it is accustomed. On the other hand, the

DALMATIAN OR COACH DOG.—*Canis familiaris.*

cross and snappish cat, the snarling Dog, and the crabbed-tempered horse are sure signs of corresponding qualities in the man that owns them, and will deter an observer of animal natures from placing his confidence in the man who could infuse such evil qualities into the creatures that surround him, and from whom they take their tone.

As the Dog is possessed of a disposition which is more easily assimilated with that of man than is the case with most animals, the affinity between itself and its master is constantly brought before our notice.

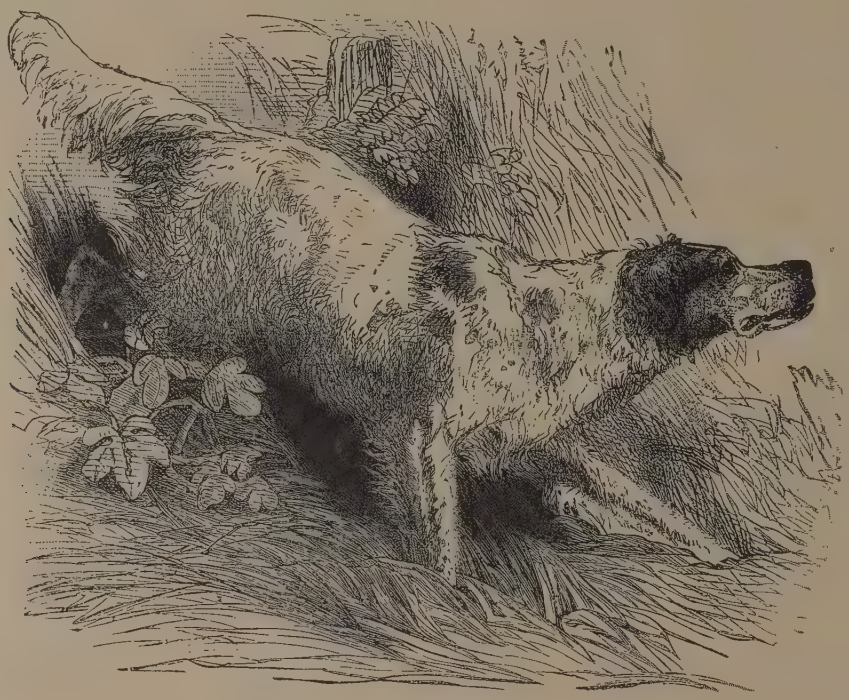
One man loves nothing so well as the largest Newfoundland or deerhound, while another is not satisfied unless his Dog be of the minutest proportions compatible with canine nature. One man places his faith in the terrier, another in the poodle; one prefers the retriever, and another the spaniel. The man who pursues his sport at morning, in the face of the sun, is accompanied by the loud-tongued foxhound or beagle; while the skulking nocturnal poacher is aided in his midnight thefts by the silent and crafty lurcher.

But of all the Dogs that are associated with man, and of all the men that make companionship with Dogs, the most repulsive, and most to be avoided by honest Dogs and men, are the bull-dog and his owner.

I may be accused of delivering too severe a judgment on Dog and man. Those who have been led by duty, curiosity, or chance through the unsavory localities which are haunted by the members of the "Fancy," and have instinctively stepped aside from the fur-capped, beetle-browed, sleek-haired, suspicious ruffian, leading his sullen and scowling bull-dog at his

heels, will hardly find terms too severe for the depraved human character that could encourage or cherish such an epitome of the most brutal features of the canine nature. Dog and man suit each other admirably; and, had there been no human ruffian, there would have been no canine representation of his own ruffianism.

That such a similarity should exist is an absolute necessity, inasmuch as the more powerful nature will inevitably expel the weaker, unless there is something in common between their characters, which will enable the higher being to convey its meaning to the lower, and the lower to receive obediently the mandates of the higher. As the two natures become more assimilated, they produce a corresponding effect in the outer form, and the resemblance extends to form and feature as well as to character. We notice the same effect to be produced



ENGLISH SETTER.--*Canis familiaris.*

among human beings when they are much thrown together, and a similar though not so evident a phenomenon takes place between the man and the brute.

The very form of the Dog tells its character as clearly as the human countenance betrays the disposition of the spirit which moulds its lines. It is most truly said by Bailey, in that mine of golden poetry, "Festus":—

> "All animals are living hieroglyphs—
> The dashing Dog and stealthy-stepping cat,
> Hawk, bull, and all that breathe, mean something more
> To the true eye than their shapes show; for all
> Were made in love, and made to be beloved."

As the pointers derive their name from their habits of standing still and pointing at any game which they may discover, so the SETTERS have earned their title from their custom of "setting" or crouching when they perceive their game. In the olden days of sporting, the Setter used always to drop as soon as it found the game, but at the present day the animal is in so far the imitator of the pointer, that it remains erect while marking down its game.

There are several breeds of these animals: the ordinary English Setter, the Russian Setter, and the Irish Setter.

Each of these breeds possesses its particular excellences, which are combined in experienced and skillful hands by careful admixtures of one breed with another.

The Russian Setter is a curious animal in appearance, the fur being so long and woolly in texture, and so thoroughly matted together, that the form of the Dog is rendered quite indistinct. It is by no means a common animal, and is but seldom seen. It is an admirable worker, quartering its ground very closely, seldom starting game without first marking them; and possessed of a singularly delicate nose. In spite of its heavy coat, it bears heat as well as the lighter-clad pointer, and better than the ordinary English Setters, with their curly locks. When crossed with the English Setter it produces a mixed breed, which seems to be as near perfection as can be expected in a Dog, and which unites the good properties of both parents. A well-known sportsman, when trying these Dogs against his own animal, which he fondly thought to be unrivalled, found that the Russian animals obtained three points where his own Dog only made one, and that from their quiet way of getting over the ground they did not put up the birds out of gun-range, as was too often the case with his own swifter-footed Dogs.

The muzzle of this animal is bearded almost as much as that of the deerhound and the Scotch terrier, and the overhanging hair about the eyes gives it a look of self-relying intelligence that is very suggestive of the expression of a Skye terrier's countenance. The soles of the feet are well covered with hair, so that the Dog is able to bear plenty of hard work among heather or other rough substances.

The Irish Setter is very similar to the English animal, but has larger legs in proportion to the size of the body, and is distinguished from its English relative by a certain Hibernian air that characterizes it, and which, although conspicuous enough to a practised eye, is not easy of description.

Taking as our authority the author above quoted, in the history of the pointer, the points of the Setter are shortly as follows:—"A moderately heavy head, but not so much so as in the pointer; the muzzle not so broad nor so square in profile, the lower angle being rounded off, but the upper being still nearly a right angle. The eye is similar to that of the pointer, but not so soft, being more sparkling and full of spirit. The ear long, but thin, and covered with soft, silky hair, slightly waved. The neck is long, but straighter than that of the pointer, being also lighter and very flexible. The back and loins are hardly so strong as those of the pointer, the latter also being rather longer; the hips also are more ragged, and the ribs not so round and barrel-like. The tail or 'flag' is usually set on a little lower, is furnished with a fan-like brush of long hair, and is slightly curled upwards towards the tip, but it should never be carried over the back or raised above the level of its root, excepting while standing, and then a slight elevation is admired, every hair standing down with a stiff and regular appearance. The elbow, when in perfection, is placed so low as to be fully an inch below the brisket, making the fore-arm appear very short. The hind-feet and legs are clothed with hair or 'feathered,' as it is called, in the same way as the fore-legs, and the amount of this beautiful provision is taken into consideration in selecting the Dog for his points."

This description applies equally to the English and the Irish Setters.

While at work, the Setter has a strange predilection for water, and this fancy is carried so far in some Dogs that they will not go on with their work unless they can wet the whole of their coats once at least in every half-hour. If deprived of this luxury they pant and puff with heat and exertion, and are quite useless for the time.

It seems that the Setter is a less tractable pupil than the pointer, and even when taught is apt to forget its instructions, and requires a second course of lessons before it will behave properly in the field. Owing to the rough coat and hair-defended feet of the Setter, it is able to go through more rough work than the pointer, and is therefore used in preference to that animal, where the rough stem of the heather would work much woe to a tender-footed Dog, and where the vicissitudes of the climate are so rapid and so fierce that they would injure the constitution of any but a most powerfully built animal.

This Dog, as well as the foxhound and harrier, is guided to its game by the odor that proceeds from the bird or beast which it is following; but the scent reaches its notrils in a different manner.

The foxhound, together with the harrier and beagle, follows up the odorous track which is left on the earth by the imprint of the hunted animal's feet, or the accidental contact of the under-side of its body with the ground. But the pointer, Setter, spaniel, and other Dogs that are employed in finding victims for the gun, are attracted at some distance by the scent that exhales from the body of its game, and are therefore said to hunt by "body-scent," in contra-distinction to the hounds who hunt by "foot-scent." The direction in which the wind blows is, therefore, a matter of some consequence, and is duly taken advantage of by every good sportsman.

RETRIEVER Dogs, which are so called on account of their value in recovering or "retrieving" game that has fallen out of the reach of the sportsman, or on which he does not choose to expend the labor of fetching for himself, are of various kinds, and in every case are obtained

RETRIEVER.—*Canis familiaris.*

by a crossing of two breeds. There are two principal breeds of Retrievers, the one being obtained by the mixture of a Newfoundland Dog and a setter, and the other by a cross between the water spaniel and the terrier.

The former of these breeds is the most generally known, and is the animal which is represented in the engraving. On inspection of this Dog, the characteristics of both parents are plainly perceptible in its form. For the larger kinds of game, such as hares or pheasants, this Dog is preferable to the Terrier Retriever, as it is a more powerful animal, and therefore better able to carry its burden; but, for the lesser description of game, the smaller Dog is preferable for many reasons.

The height of the large Retriever is from twenty-two to twenty-four inches; its frame is powerfully built, and its limbs strong. A good nose is necessary, for the purpose of enabling the Dog to trace the devious and manifold windings of the wounded birds, which would baffle any animal not endowed with so exquisite a sense of smell. The fur of this Dog is curly and of moderate length, and is almost invariably black in color. Indeed, many Dog-owners will repudiate a Retriever of any other color but black.

To train a Retriever properly is rather a difficult task, demanding the greatest patience and perseverance on the part of the instructor. It is comparatively easy to teach a Dog to fetch and carry a load, but to teach him to retrieve in water is quite a different matter. On land the Dog can see the object from some little distance, but in the water his nose is so nearly on a level with the object for which he is searching, that he can only see a very little distance ahead, and must learn to guide his way by the voice and gesture of his master.

It is said that the greatest difficulty in the course of instruction is to keep the Dog from the water-rats, which are found so abundantly on the banks of rivers and ponds, and which afford such powerful temptations to a young and inexperienced animal.

Another obstacle in the tuition is the natural propensity of the Dog to bark when he is excited; and as a young Dog is excited by almost everything that crosses his path, he generally tries his teacher's patience sorely before he learns to be silent and not to disturb the game by even a low whine. Again: the natural instinct of the Dog tells him to eat the animal which he has found, and it is not until he has been duly instructed that he learns to bring the game to his master without injuring it. July and August are the best months for teaching the Retriever, because the water is then comparatively warm, and there is no risk of disgusting the animals by forcing them into an icy bath, or of bringing on disease by overmuch exposure to a cold wind while their coats are wet and themselves wearied.

In order to keep the Dog from closing his teeth too firmly upon the game, he should always be made to lay down his spoil at his master's feet, or to loosen his hold as soon as his master touches the object which he is carrying. If the prey be snatched from his mouth, he instinctively bites sharply in order to retain it; and when he gets into so bad a habit often damages the dead game so much that it is quite useless. Whenever a Dog is sent to fetch any object he must on no account be permitted to return without it, as, if he should once do so, he will ever afterwards be liable to give up the search as soon as he feels tired.

There are many other little difficulties in the training of the Retriever, some of them incidental to the Dog, simply because it is a Dog, and others belonging to the character of the individual animal. One great point to gain is, to make the Dog understand that the birds which he delights in fetching are killed by the gun and not by himself. Until he fully understands this lesson he is apt to dart off in chase of a bird as soon as he sees it, or perceives its scent, and to chase it until it is out of sight, just as we may see puppies chasing sparrows half over a field, barking at them as if they were to be caught as easily as if they were so many mice.

The smaller Retriever is produced by a cross of the terrier with the beagle, and in many points is superior to the large black Retriever. Should a larger animal be required, the pointer is employed in the cross instead of the beagle.

They are very quiet Dogs, and when on their quest do not make so much noise as the larger Retrievers, so that they are especially useful when the game is wild. The kind of terrier which is employed in the crossing depends on the caprice of the breeder, some persons preferring the smooth English Dog, and others the rough Scotch terrier. Being small Dogs, they can be kept in the house, and become very companionable, so that when they go to their regular work they feel more love and respect for their master than would have been the case if they had been kept in a kennel, or sent to a cottage on board-wages.

Spaniels can be taught to retrieve, and will perform their task nearly as well as a Retriever itself. A thoroughly well-taught Dog is almost invaluable to the sportsman, and will command a large price. If possible, the animal should in every case be taught by the person who intends to use him in the field, as neither the Dog nor its master can learn each other's ways without some experience, and without this knowledge neither can work well, or feel sure of the co-operation of the other.

These animals are also valuable for retrieving, because, like the smaller Retrievers, they are capable of sharing the house with their master, and are therefore more amenable to his authority, and more likely to follow out his wishes, than if their intercourse were restricted to the hunting-field. The peculiar and very unpleasant odor of the skin, which is found to exist in almost every kind of Dog, can be removed by careful and periodical washing—a prac-

tice which the animal soon learns to appreciate. There is, however, a drawback to the companionship of the Dog, in the parasitic insects with which it is generally infested, and which are too tenacious of life to be destroyed by immersion in water, or too strong to be dislodged by ordinary mechanical means.

The only method by which these disagreeable pests can be destroyed is by a rapidly acting poison, which kills them before they can retreat from its action. Such poisonous substances are too often dangerous to the Dog as well as to its parasites, and may seriously injure the animal instead of conferring any benefit upon it. Preparations of mercury are frequently used for this purpose, but are dangerous remedies for the reason above given, and are, moreover, rather tedious of application, requiring a careful rubbing in of the poison, and as careful a rubbing out again, together with the drawback of a muzzle on the poor Dog's mouth for three or four days, to prevent him from licking his irritated skin.

One very safe and very quick remedy is the "Persian Insect-destroying Powder," which has almost a magical effect, and is perfectly harmless to the Dog.

The best mode of applying this remedy is, first to dust the Dog well with the substance until every portion of him has received a few particles of the powder, and then to put him into a strong canvas bag, in which a small handful of the powder has been placed and shaken about well, so as to distribute it equally over the interior of the bag. Leave his head protruding from the bag, and put on his head and neck a linen cap, in which are holes for his nose and eyes, and let the interior of the cap be well treated with the powder. Lay him on the ground, and let him tumble about as much as he chooses, the more the better. In an hour or two let him out of the bag, and scrub his coat well the wrong way with a stiff brush.

If, during this operation, the Dog be placed on a sheet, or any white substance, it will be covered with dead and dying insects, and if the contents of the bag be emptied upon the white cloth, the number of moribund parasites will be rather astonishing. In a week or so the operation should be repeated, in order to destroy the creatures that have been produced from the unhatched eggs that always resist the powers of the destructive powder. I have personally tried the experiment, and have found the results to be invariably successful. The same substance is equally useful in freeing birds from their chief pest, the red mite, and is of deadly efficacy in the immolation of certain insects that are too often found in human houses.

THE MOST useful variety of the canine species is that sagacious creature on whose talent and energy depends the chief safety of the flock.

This animal seems to be, as far can be judged from appearances, the original ancestor of the true British Dogs, and preserves its pecular aspect in almost every country in Europe. It is a rather large Dog, as is necessary, in order to enable the animal to undergo the incessant labor which it is called on to perform, and is possessed of limbs sufficiently large and powerful to enable it to outrun the truant members of the flock, who, if bred on the mountain-side, are so swift and agile that they would readily baffle the efforts of any Dog less admirably fitted by nature for the task of keeping them together.

As the Sheep-dog is constantly exposed to the weather, it needs the protection of very thick and closely-set fur, which, in this Dog, is rather woolly in its character, and is especially heavy about the neck and breast. The tail of the Sheep-dog is naturally long and bushy, but is generally removed in early youth, on account of the now obsolete laws, which refused to acknowledge any Dog as a Sheep-dog, or to exempt it from the payment of a tax, unless it were deprived of its tail. This law, however, often defeated its own object, for many persons who liked the sport of coursing, and cared little for appearances, used to cut off the tails of their greyhounds, and evade the tax by describing them as Sheep-dogs.

The muzzle of this Dog is sharp, its head is of moderate size, its eyes are very bright and intelligent, as might be expected in an animal of so much sagacity and ready resource in time of need. Its feet are strongly made, and sufficiently well protected to endure severe work among the harsh stems of the heather on the hills, or the sharply-cutting stones of the high-road. Probably on account of its constant exercise in the open air, and the hardy manner in

which it is brought up, the Sheep-dog is perhaps the most untiring of our domesticated animals.

There are many breeds of this animal, differing from each other in color and aspect, and deriving their varied forms from the Dog with which the family has been crossed. Nearly all the sporting Dogs are used for this purpose, so that some Sheep-dogs have something of the pointer nature in them, others of the foxhound, and others of the setter. This last cross is the most common. Together with the outward form, the creature inherits much of the sporting predilections of its ancestry, and is capable of being trained into a capital sporting Dog.

Many of these animals are sad double-dealers in their characters, being by day most respectable Sheep-dogs, and by night most disreputable poachers. The mixed offspring of a Sheep-dog and a setter is as silently successful in discovering and marking game by night as he is openly useful in managing the flocks by day. As he spends the whole of his time in the

SHEPHERD'S DOG.—*Canis familiaris pecuarius.*

society of his master, and learns from long companionship to comprehend the least gesture of hand or tone of voice, he is far better adapted for nocturnal poaching than the more legitimate setter or retriever, and causes far more deadly havoc among the furred and feathered game. Moreover, he often escapes the suspicion of the gamekeeper by his quiet and honorable demeanor during the daytime, and his devotion to his arduous task of guarding the fold, and reclaiming its wandering members. It seems hardly possible that an animal which works so hard during the day should be able to pass the night in beating for game.

Sometimes there is an infusion of the bull-dog blood into the Sheep-dog, but this mixture is thought to be unadvisable, as such Dogs are too apt to bite their charge, and so to alienate from themselves the confidence of the helpless creatures whom they are intended to protect, and not to injure. Unless the sheep can feel that the Dog is, next to the shepherd, their best friend, the chief value of the animal is lost.

It is well observed by Mr. Youatt, in his valuable work on these Dogs, that if the sheep do not crowd round the Dog when they are alarmed, and place themselves under his protection, there is something radically wrong in the management of the flock. He remarks, that the Dog will seldom, if ever, bite a sheep, unless incited to do so by its master, and suggests that

the shepherd should be liable to a certain fine for every tooth-mark upon his flock. Very great injury is done to the weakly sheep and tender lambs by the crowding and racing that takes place when a cruel Dog begins to run among the flock. However, the fault always lies more with the shepherd than with his Dog, for as the man is, so will his Dog be. The reader must bear in mind that the barbarous treatment to which travelling flocks are so often subjected is caused by drovers and not shepherds, who, in almost every instance, know each sheep by its name, and are as careful of its well-being as if it were a member of their own family. The Dogs which so persecute the poor sheep in their bewilderments among cross-roads and the perplexity of crowded streets, are in their turn treated by their masters quite as cruelly as they treat the sheep. In this, as in other instances, it is "like man and like Dog."

As a general rule, the Sheep-dog cares little for any one but his master, and so far from courting the notice or caresses of a stranger will coldly withdraw from them, and keep his distance. Even with other Dogs he rarely makes companionship, contenting himself with the society of his master alone.

THE SCOTCH SHEEP-DOG, more familiarly called the COLLEY, is not unlike the English Sheep-dog in character, though it rather differs from that animal in form. It is sharp of nose, bright and mild of eye, and most sagacious of aspect. Its body is heavily covered with long and woolly hair, which stands boldly out from its body, and forms a most effectual screen against the heat of the blazing sun, or the cold, sleety blasts of the winter winds. The tail is exceedingly bushy, and curves upwards towards the end, so as to carry the long hairs free from the ground. The color of the fur is always dark, and is sometimes variegated with a very little white. The most approved tint is black and tan; but it sometimes happens that the entire coat is of one of these colors, and in that case the Dog is not so highly valued.

The "dew-claws" of the English and Scotch Sheep-dogs are generally double, and are not attached to the bone, as is the case with the other claws. At the present day it is the custom to remove these appendages, on the grounds that they are of no use to the Dog, and that they are apt to be rudely torn off by the various obstacles through which the animal is obliged to force its way, or by the many accidents to which it is liable in its laborious vocation. In the entire aspect of this creature there is a curious resemblance to the Dingo, as may be seen on reference to the account of that animal in a subsequent page.

It is hardly possible to overrate the marvellous intelligence of a well-taught Sheep-dog; for if the shepherd were deprived of the help of his Dog his office would be almost impracticable. It has been forcibly said by a competent authority that, if the work of the Dog were to be performed by men, their maintenance would more than swallow up the entire profits of the flock. They, indeed, could never direct the sheep so successfully as the Dog directs them; for the sheep understand the Dog better than they comprehend the shepherd. The Dog serves as a medium through which the instructions of the man are communicated to the flock; and being in intelligence the superior of his charge, and the inferior of his master, he is equally capable of communicating with either extreme.

One of these Dogs performed a feat which would have been, excusably, thought impossible, had it not been proved to be true. A large flock of lambs took a sudden alarm one night, as sheep are wont, unaccountably and most skittishly, to do, and dashed off among the hills in three different directions. The shepherd tried in vain to recall the fugitives; but finding all his endeavors useless, told his Dog that the lambs had all run away, and then set off himself in search of the lost flock. The remainder of the night was passed in fruitless search, and the shepherd was returning to his master to report his loss. However, as he was on the way, he saw a number of lambs standing at the bottom of a deep ravine, and his faithful Dog keeping watch over them. He immediately concluded that his Dog had discovered one of the three bands which had started off so inopportunely in the darkness; but on visiting the recovered truants he discovered, to his equal joy and wonder, that the entire flock was collected in the ravine, without the loss of a single lamb.

How that wonderful Dog had performed this task, not even his master could conceive. It

may be that the sheep had been accustomed to place themselves under the guidance of the Dog, though they might have fled from the presence of the shepherd; and that when they felt themselves bewildered in the darkness they were quite willing to entrust themselves to their well-known friend and guardian.

The memory of the Shepherd's Dog is singularly tenacious, as may appear from the fact that one of these Dogs, when assisting his master, for the first time, in conducting some sheep, experienced very great difficulty in guiding his charge among the many cross-roads and by-ways that intersected their route. But on the next journey he found but little hindrance, as he was able to remember the points which had caused him so much trouble on his former expedition, and to profit by the experience which he had then gained.

THE DROVER'S DOG is generally produced from the sheep-dog and the mastiff or fox-hound, and sometimes from the sheep-dog and the greyhound or pointer; the peculiar mixtures being employed to suit the different localities in which the Dog is intended to exercise its powers. In some places the Drover's Dog is comparatively small, because the sheep are small, docile, and not very active. But when the sheep are large, agile, and vigorous, and can run over a large extent of ground, a much larger and more powerful animal is needed, in order to cope with the extended powers of the sheep which are committed to its guardianship.

Although the Drover's Dog may be entrusted with the entire charge of the flock, its rightful vocation is the conveyance of the sheep from place to place. It will often learn its business so thoroughly that it will conduct a flock of sheep or a herd of cattle to the destined point, and then deliver up its charge to the person who is appointed to receive them. Not the least extraordinary part of its performance is, that it will conduct its own flock through the midst of other sheep without permitting a single sheep under its charge to escape, or allowing a single stranger to mix with its own flock.

Such abilities as these can be applied to wrong purposes as well as to good ones, and there is a well-known story of a drover who was accustomed to steal sheep through the help of his Dog. His plan was to indicate, by some expressive gesture which the Dog well understood, the particular sheep which he wished to be added to his own flock, and then to send his flock forward under the guardianship of the Dog, while he remained with his companions at the public-house bar. The clever animal would then so craftily intermingle the two flocks that it contrived to entice the coveted sheep into its own flock, and then would drive them forwards, carrying off the stolen sheep among the number. If the stratagem were not discovered, the owner of the Dog speedily changed the marks on the sheep, and thus merged them with his own legitimate property. If the fraud were detected, it was set down as an excusable mistake of the Dog, the stolen animals were restored, and the real thief escaped punishment. However, detection came at last, as it always does, sooner or later.

THE true CUR DOG is produced from the sheep-dog and the terrier, and is a most useful animal to the class of persons among whom it is generally found. It is rather apt to be petulant in its temper, and is singularly suspicious of strangers; so that, although it is rather an unpleasant neighbor by reason of its perpetually noisy tongue, it is of the greatest service to the person to whom it belongs. It is an admirable house-dog, and specially honest, being capable of restraining its natural instincts, and of guarding its owner's provisions, even though it may be almost perishing with hunger.

The Cur is the acknowledged pest of the passing traveller, especially if he be mounted, or is driving, as it rushes out of its house at the sound of the strange footstep, and follows the supposed intruder with yelps and snaps until it flatters itself that it has completely put the enemy to flight. About the house the Cur is as useful as is the colley among the hills, for it is as ready to comprehend and execute the wishes of its master at home as is the sheep-dog on the hills. Indeed, if the two Dogs were to change places for a day or two, the Cur would manage better with the sheep than the sheep-dog would manage the household tasks.

One principal reason of this distinction is, that a thorough-going sheep-dog is accustomed only to one line of action, and fails to comprehend anything that has no connection with sheep,

while the Cur has been constantly employed in all kinds of various tasks, and is, therefore, very quick at learning a new accomplishment. When the laborers are at their daily work they are often accustomed to take their dinners with them, in order to save themselves the trouble of returning home in the middle of the day. As, however, there are often lawless characters among the laborers, especially if many of them come from a distance, and are only hired for the work in hand, the services of the Cur Dog are brought into requisition. Mounting guard on his master's coat, and defending with the utmost honesty his master's little stock of provisions, he snarls defiance at every one who approaches the spot where he acts as sentinel, and refuses to deliver his charge into the hands of any but its owner. He then sits down, happy and proud of the caresses that await him, and perfectly contented to eat the fragments of that very meal which he might have consumed entirely had he not been restrained by his sense of honor.

Mr. Hogg, the "Ettrick Shepherd," says that he has known one of these Dogs to mount guard night and day over a dairy full of milk and cream, and never so much as break the

LURCHER.—*Canis familiaris.*

cream with the tip of its tongue, nor permit a cat, or rat, or any other creature, to touch the milk pans.

The Cur Dog has—as all animals have—its little defects. It is sadly given to poaching on its own account, and is very destructive to the young game. It is too fond of provoking a combat with any strange Dog, and if its antagonist should move away, as is generally the case with high-bred Dogs, when they feel themselves intruding upon territories not their own, takes advantage of the supposed pusillanimity of the stranger, and annoys him to the best of its power; but if the stranger should not feel inclined to brook such treatment, and should turn upon its persecutor, the Cur is rather apt to invoke discretion instead of valor, and to seek the shelter of its own home, from whence it launches its angry yelpings as if it would tear its throat in pieces.

Possessing many of the elements of the sheep-dog, but employed for different purposes, the Lurcher has fallen into great disrepute, being seldom seen as the companion of respectable persons. It is bred from the greyhound and sheep-dog, and is supposed to be most valuable when its parents are the rough Scotch greyhound and the Scotch colley.

It is a matter of some regret that the Dog should bear so bad a character, as it is a remarkably handsome animal, combining the best attributes of both parents, and being equally eminent in speed, scent, and intelligence. As, however, it is usually the companion of poachers and other disreputable characters, the gamekeeper bears a deadly hatred towards

the Lurcher, and is sure to shoot the poor animal at the earliest opportunity. For this conduct there is some pretext, as the creature is so admirably adapted for the pursuit and capture of game that a single poacher is enabled, by the aid of his four-legged assistant, to secure at least twice as much game as could be taken by any two men without the help of the Dog.

That punishment generally falls on the wrong shoulders is proverbially true, and holds good in the present instance. For the poor Dog is only doing his duty when he is engaged in marking or capturing game, and ought not to be subjected to the penalty of wounds or death for obeying the order which he has received. If any one is to be punished, the penalty ought to fall on the master, and not on his Dog, which is only acting under his orders, and carrying out his intentions.

The sagacity of this Dog is really wonderful. It learns to comprehend the unspoken commands of its master, and appreciates quite as fully as himself the necessity for lying concealed when foes are near, and, in every case, of moving as stealthily as possible. It is even trained to pioneer the way for its owner, and to give him timely warning of hidden enemies. Destructive to all game, whether winged or furred, the Lurcher is especially so in the rabbit warren, or in any locality where hares abound. Its delicate sense of smell permits it to perceive its prey at a distance, and its very great speed enables it to pounce upon the hare or rabbit before it can shelter itself in the accustomed place of refuge. As soon as the Lurcher has caught its prey it brings it to its master, deposits it in his hands, and silently renews its search after another victim. Even pheasants and partridges are often caught by this crafty and agile animal.

Sometimes the game-destroying instincts of the Lurcher take a wrong turn, and lead the animal to hunt sheep, instead of confining itself to ordinary game. When it becomes thus perverted it is a most dangerous foe to the flocks, and commits sad havoc among them. One farmer, living in Cornwall, lost no less than fifteen sheep in one month, all of which were killed by Lurchers.

There are many breeds of the Lurcher, on account of the various Dogs of which the parentage is formed. The greyhound and sheep-dog are the original progenitors, but their offspring is crossed with various other Dogs, in order to obtain the desired qualifications. Thus, the greyhound is used on account of its speedy foot and silent tongue, and the sheep-dog on account of its hardiness, its sagacity, and its readiness in obeying its master. The spaniel is often made to take part in the pedigree, in order to give its well-known predilection for questing game, and the hound is employed for a similar purpose. But in all these crossings the greyhound must morally predominate, although its form is barely to be traced under the rough lineaments of the Lurcher.

As the Lurcher causes such suspicion in the minds of the gamekeeper or the landlord, the owners of these Dogs were accustomed to cut off their tails, in order to make them look like honorable sheep-dogs, and so to escape the tax which presses upon sporting Dogs, and to elude the suspicious glance of the game-preserving landlord and his emissaries. So swift is this animal that it has been frequently used for the purpose of coursing the hare, and is said to perform this task to the satisfaction of its owner. It can also be entrusted with the guardianship of the house, and watches over the property committed to its charge with vigilance and fidelity. Or it can take upon itself that character in reality which its cropped tail too often falsely indicates, and can watch a fold, keep the sheep in order, or conduct them from one place to another, nearly if not quite as well as the true sheep-dog from which it sprang.

THE OTTERHOUND is now almost exclusively employed for the chase of the animal from which it derives its name. Formerly it was largely used for the purpose of hunting the hare, and from that pursuit has derived the name of "Welsh Harrier."

It is a bold, hardy, and active animal, as is needful for any Dog which engages in the chase of so fierce and hard-biting a creature as the otter. As it is forced to take to the water in search or in chase of its prey, it is necessarily endowed with great powers of swimming, or it could never match that most amphibious of quadrupeds. Those who have seen an otter when disporting itself in its congenial element must have been struck with the exceeding rapidity and consummate ease of its movements, and can appreciate the great aquatic powers

that must be possessed by any Dog which endeavors to compete with so lithe and agile an antagonist.

Great courage is needful on the part of the Dog, because the otter is, when irritated, a peculiarly fierce animal, and can inflict most painful wounds by the bite of its long sharp teeth. It is, moreover, so pliant of body that it can twist itself about almost like a snake, and, if grasped heedlessly, can writhe itself about as actively and slipperily as an eel, and unexpectedly plant its teeth in its antagonist's nose. Now, the nose is a very sensitive portion of all animal economy, and a wound or a bite in that region causes such exceeding pain that none but a well-bred Dog can endure the torture without flinching.

Such needful courage is found in the Otter Dog, but is sometimes rather prone to degenerate into needless ferocity. There are few animals, with the exception of the bull-dog, which fight so savagely as the Otterhound, or bite so fiercely and with such terrible results. The attack of the Otterhound is even more dangerous than that of the bull-dog and its bite more to

OTTERHOUND.—*Canis familiaris.*

be dreaded. As is well known, where the bull-dog has once fixed his teeth there he hangs, and cannot be forced to loosen his hold without the greatest difficulty; but when the Otterhound bites, it instantly tears its teeth away without relaxing its jaws, and immediately seizes its prey with a second gripe. The wounds which it inflicts by this ferocious mode of action are of the most terrible description, lacerating all the tissues, and tearing asunder the largest and most important vessels. The reason for this very savage mode of attack is evident enough. The otter is so quick and agile, that, if the Dog were to retain his hold, the otter would twist round and inflict a severe bite, so the Dog bites as fast and as often as he can, in order to give his antagonist the fewest possible chances of retaliation.

When a number of these Dogs are placed in the same kennel they are sadly apt to fight, and to inflict fatal injuries on each other from the sheer love of combat. If two of the Dogs begin to quarrel and to fight, the others are sure to join them; so that, from the bad temper of a single Dog, half the pack may lose their lives.

As these Dogs are obliged to endure the most turbulent weather and the coldest streams, they are furnished with a very strong, rough, and wiry coat, which is capable of resisting the effects of cold and storm, and is also of much service in blunting the severity of the otter's bite. The face and muzzle are guarded with a profusion of longish and very rough "whisker" hairs.

Whether this animal is the production of a cross breed between two families of Dogs, or whether it forms a distinct family in itself, is a mooted point. According to the best authorities, the latter opinion seems to be the best founded. It is thought by those who consider the Dog to be of mixed breed, that it was originally the offspring of the deerhound and terrier;

but as it retains the full melodious note of the hound, which is always injured or destroyed by an admixture with the sharp-voiced terrier, it appears to owe more of its parentage to that animal. Be this as it may, it is now treated as a separate breed, and may claim the honors of a pure lineage. In all probability it is a variety of the old southern hound, which was selected carefully for the work which it is intended to perform, and which in course of time has so settled down to its vocation as to have undergone that curious variation in form and aspect that is always found in animals or men which have long been employed in the same kind of work.

Any one of moderate experience among Dogs and their habits can, on seeing the animal, determine its avocation, just as any one who is conversant with men and their manners can, on seeing a man, at once announce his calling. There is something in the little peculiarities of the formation which tells its tale to the observing eye. There is a kind of moral and intellectual, as well as physical, atmosphere, that seems to surround every creature, and to tell of its essential nature, its education, and its habits. Animals appear to be peculiarly sensitive to this surrounding emanation, and to be attracted or repelled by an influence as powerful, though as invisible, as that which attracts or repels the different poles of a magnet. We feel it ourselves in the instinctive cordiality or repugnance which we perceive when brought in contact with a fresh acquaintance, and which very seldom misleads those who are content to follow their instincts. The nature of each being seems to pervade its every particle, as it were—to overflow and shed its influence, consciously or otherwise, on every object with which it enters into communion. There are some men whose very presence warms and enlivens all whom they approach, and that not from any suavity of manner, for such men are often most abrupt and truth-telling in their demeanor; and there are others who, however urbane may be their deportment, seem to cast from them a cold and freezing atmosphere that congeals all those around them, like the icebergs of the northern seas.

Although, on examining the form of the Otterhound, we should not be able to point out the description of game which it is accustomed to pursue, we should at once pronounce it to be a strong and hardy animal, a good swimmer, possessed of a delicate nose, and of stout courage. In each of these accomplishments the Otterhound excels, and needs them all when it ventures to cope with the fierce prey which it is taught to pursue.

The Otterhound is a tolerably large Dog, measuring nearly two feet in height at the shoulder. This is the height of the male; that of the female is an inch or two less.

THE FINE animal which is represented in the accompanying engraving can hardly be considered as belonging to a separate breed, but rather as a mixture between several families of domesticated Dogs.

According to competent judges, the BOARHOUND is derived from a mingling of the mastiff with the greyhound, crossed afterwards with the terrier. The reader will see why these three animals are employed for the purpose of obtaining a Dog which is capable of successful attack on so dangerous and powerful a brute as the boar. The greyhound element is required in order to give the Dog sufficient speed for overtaking the boar, which is a much swifter animal than would be supposed from his apparently unwieldy and heavy frame. The admixture of the mastiff is needed to give it the requisite muscular power and dimensions of body, and the terrier element is introduced for the sake of obtaining a sensitive nose, and a quick, spirited action.

As might be imagined would be the case with an animal which derives its origin from these sources, the Boarhound varies very considerably in form and habits, according to the element which may preponderate in the individual. A Dog in which the greyhound nature is dominant will be remarkably long of limb and swift of foot; one in whose parentage the mastiff takes the greatest share will be proportionately large and powerful; while the Dog in whose blood is the strongest infusion of the terrier will not be so swift or so large as the other two, but will excel them in its power of scent and its brisk activity of movement.

To train the Dog rightly to his work is a matter of some difficulty, because a mistake is generally fatal, and puts an end to further instruction by the death of the pupil. It is com-

paratively easy to train a pointer or a retriever, because if he fails in his task through over-eagerness or over-tardiness, the worst consequence is, that the sportsman loses his next shot or two, and the Dog is corrected for his behavior. But if a Boarhound rushes too eagerly at the bristly quarry, he will in all probability be laid bleeding on the ground by a rapid stroke from the boar's tusks, and if he should hang back and decline the combat, he is just as likely to be struck by an infuriated boar as if he were boldly attacking it in front. A boar has been known to turn with such terrible effect upon a pack containing fifty Dogs, that only ten escaped scathless, and six or seven were killed on the spot.

Great tact is required on the part of the hound in getting into a proper position, so as to make his onset without exposing himself to the retaliating sweeps of the foam-flecked tusks, and at the same time to act in concert with his companions, so as to keep the animal busily

BOARHOUND.—*Canis familiaris.*

engaged with their reiterated attacks, while their master delivers the death-blow with a spear or rifle-bullet.

As we have no wild boars ranging at will through our forests, the Boarhound is never seen in this country except as an object for the curious to gaze upon, or imported through the caprice of some dog-loving individual. But in many parts of Germany it is still employed in its legitimate avocation of chasing the wild boar, and is used in Denmark and Norway for the pursuit of that noble animal, the elk. The latter creature is so large, so fleet, and so vigorous, that it would easily outrun or outfight any Dog less swift or less powerful than the Boarhound.

In the fur of the Boarhound the color of the mastiff generally predominates, the coat being usually brown or brindled uniformly over the body and limbs, but in some animals the color is rather more varied, with large brown patches upon a slate-colored ground. The limbs are long and exceedingly powerful, and the head possesses the square muzzle of the mastiff, together with the sharp and somewhat pert air of the terrier. It is a very large animal, measuring from thirty to thirty-two inches in height at the shoulder.

THE BULL-DOG is said, by all those who have had an opportunity of judging its capabilities, to be, with the exception of the game-cock, the most courageous animal in the world.

Its extraordinary courage is so well known as to have passed into a proverb, and to have so excited the admiration of the British nation that they have been pleased to symbolize their peculiar tenacity of purpose under the emblem of this small but most determined animal. In height the Bull-dog is but insignificant, but in strength and courage there is no Dog that can match him. Indeed, there is hardly any breed of sporting Dog which does not owe its high courage to an infusion of the Bull-dog blood; and it is chiefly for this purpose that the pure breed is continued.

Those cruel and cowardly combats between the bull and the Dog, which were a disgrace, even in the earlier part of the present century, have long been abolished, and a few "bull rings," still remaining in the ground, are their sole relics. In these contests the Dog

BULL-DOG.—*Canis familiaris molossus.*

was trained to fly at the head of the bull, and to seize him by the muzzle as he stooped his head for the purpose of tossing his antagonist into the air. When he had once made good his hold it was almost impossible for the bull to shake off his pertinacious foe, who clung firmly to his antagonist, and suffered himself to be swung about as the bull might choose.

There seems, indeed, to be no animal which the Bull-dog will not attack without the least hesitation. The instinct of fight is strong within him, and manifests itself actively in the countenance and the entire formation of this creature.

It is generally assumed that the Bull-dog must be a very dull and brutish animal, because almost every specimen which has come before the notice of the public has held such a character. For this unpleasant disposition, a celebrated writer and zoologist attempts to account by observing that the brain of the Bull-dog is smaller in proportion to its body than that of any other Dog, and that therefore the animal must needs be of small sagacity. But "Stonehenge" well remarks, that although the Bull-dog's brain appears to the eye to be very small

when compared with the body, the alleged discrepancy is only caused by the deceptive appearance of the skull. It is true that the brain appears to be small when compared with the heavy bony processes and ridges that serve to support the muscles of the head and neck, but if the brain be *weighed* against the remainder of the body, it will be found rather to exceed the average than to be below it.

The same writer is disposed to think the Bull-dog to be a sadly maligned animal, and that his sagacity and affections have been greatly underrated. He states that the pure Bull-dog is not naturally a quarrelsome creature, and that it would not bear so evil a character if it were better taught.

According to him, the Bull-dog is really a sufficiently intelligent animal, and its mental qualities capable of high cultivation. It is true that the animal is an unsafe companion even for its master, and that it is just as likely to attack its owner as a stranger, if it feels aggrieved. An accidental kick, or a tread on the toes, affords ample pretext for the animal to fasten on its supposed enemy; and when once it does fix its teeth, it is not to be removed except by the barbarous method which is considered to be legitimate for such a purpose, but which will not be mentioned in these pages. However, most of these shortcomings in temper are said to be produced by the life which the poor Dog leads, being tied up to his kennel for the greater part of his time; and, when released from his bondage, only enjoying a limited freedom for the purpose of fighting a maddened bull, or engaging in deadly warfare with one of his own kind. Any animal would become morose under such treatment; and when the sufferer is a Bull-dog, the results of his training are often disastrous enough.

The shape of this remarkable animal is worthy of notice. The fore-quarters are particularly strong, massive, and muscular; the chest wide and roomy; and the neck singularly powerful. The hind-quarters, on the contrary, are very thin, and comparatively feeble; all the vigor of the animal seeming to settle in its fore-legs, chest, and head. Indeed, it gives the spectator an impression as if it were composed of two different Dogs; the one a large and powerful animal, and the other a weak and puny quadruped, which had been put together by mistake. The little fierce eyes that gleam savagely from the round, combative head, have a latent fire in them that gives cause for much suspicion on the part of a stranger who comes unwarily within reach of one of these Dogs. The underhung jaw, with its row of white glittering teeth, seems to be watering with desire to take a good bite at the stranger's leg; and the matter is not improved by the well-known custom of the Bull-dog to bite without giving the least vocal indication of his purpose.

In all tasks where persevering courage is required, the Bull-dog is quietly eminent, and can conquer many a Dog in its own peculiar accomplishment. The idea of yielding does not seem to enter his imagination, and he steadily perseveres until he succeeds or falls. One of these animals was lately matched by his owner to swim a race against a large white Newfoundland Dog, and won the race by nearly a hundred yards. The owners of the competing quadrupeds threw them out of a boat at a given signal, and then rowed away as fast as they could pull. The two Dogs followed the boat at the best of their speed, and the race was finally won by the Bull-dog. It is rather remarkable that the Bull-dog swam with the whole of his head and the greater part of his neck out of the water, while the Newfoundland only showed the upper part of his head above the surface.

According to the authority which has already been quoted, a well-bred Bull-dog ought to present the following characteristics of form. "The head should be round, the skull high, the eye of moderate size, and the forehead well sunk between the eyes; the ears semi-erect and small, well placed on the top of the head, and rather close together than otherwise; the muzzle short, truncate, and well furnished with chop; the back should be short, well arched towards the stern, which should be fine, and of moderate length. Many Bull-dogs have what is called a crooked stern, as though the vertebræ of the tail were dislocated or broken; I am disposed to attribute this to in-breeding. The coat should be fine, though many superior strains are very woolly coated; the chest should be deep and broad, the legs strong and muscular, and the foot narrow, and well split up like a hare's."

THE MASTIFF, which is the largest and most powerful of the indigenous English Dogs, is of a singularly mild and placid temper, seeming to delight in employing its great powers in affording protection to the weak, whether they be men or Dogs. It is averse to inflicting an injury upon a smaller animal, even when it has been sorely provoked, and either looks down upon its puny tormentor with sovereign disdain, or inflicts just sufficient punishment to indicate the vast strength which it could employ, but which it would not condescend to waste upon so insignificant a foe.

Yet, with all this nobility of its gentle nature, it is a most determined and courageous animal in fight, and, when defending its master or his property, becomes a foe which few opponents would like to face. These qualifications of mingled courage and gentleness adapt it especially for the service of watch-dog, a task in which the animal is as likely to fail by overweening zeal as by neglect of its duty. It sometimes happens that a watch-dog is too

MASTIFF.—*Canis familiaris.*

hasty in its judgment, and attacks a harmless stranger, on the supposition that it is resisting the approach of an enemy. Sometimes the bull-dog strain is mixed with the Mastiff, in order to add a more stubborn courage to the animal; but in the eyes of good judges this admixture is quite unnecessary.

It has already been mentioned that the Mastiff is fond of affording the benefit of its protection to those who need it. As, however, the Dog is but a Dog after all, it sometimes brings evil instead of good upon those who accept its guardianship.

During my school-boy days, a large Mastiff, called Nelson, struck up a great friendship with myself and some of my school-fellows, and was accustomed to partake of our hebdomadal banquets at the pastry-cook's shop, and to accompany us in our walks. One summer, as we were bathing in the Dove, a man pounced upon our clothes, and would have carried them off, had it not been for the opportune assistance of some older lads of the same school, who captured the offender after a smart chase, and tossed him into the river until he was fain to cry for mercy.

In order to prevent a repetition of a similar mischance, we determined to take Nelson with us, and put him in charge of our clothes. The old Dog was delighted at the walk, and

mounted sentry over the pile of garments, while we recreated ourselves in the stream, and caught crayfish or tickled trout at our leisure. Unfortunately, a number of cows had lately been placed in the field, and after the usually inquisitive custom of cows, they approached the spot where Nelson was lying, in order to ascertain the nature of the strange object on the river bank. Nelson permitted them to come quite close, merely uttering a few warning growls, but when one of the cows began to toss a jacket with her horns, his patience gave way and he flew at the offender. Off scampered all the cows, but soon returned to the charge. Nelson stood firm to his post, only retreating a few steps as the cows approached the garments which he was guarding, and then dashing at them again. However, the cows' hoofs and the Dog's feet began to wreak such dire mischief among the clothes, that we found ourselves compelled to drive away the assailants and carry our clothes to the opposite bank of the river, where no cows could interfere with us.

The head of the Mastiff bears a certain similitude to that of the bloodhound and the bull-dog, possessing the pendent lips and squared muzzle of the bloodhound, with the heavy muscular development of the bull-dog. The under jaw sometimes protrudes a little, but the teeth are not left uncovered by the upper lip, as is the case with the latter animal. The fur of the Mastiff is always smooth, and its color varies between a uniform reddish-fawn and different brindlings and patches of dark and white. The voice is peculiarly deep and mellow. The height of this animal is generally from twenty-five to twenty-eight inches, but sometimes exceeds these dimensions. One of these Dogs was no less than thirty-three inches in height at the shoulder, measured fifty inches round his body, and weighed a hundred and seventy-five pounds.

THE CUBAN MASTIFF is supposed to be produced by a mixture of the true Mastiff with the bloodhound, and was used for the same purpose as the latter animal. It was not a native of the country where its services were brought into requisition, and from which it has consequently derived its name, but was imported there for the purposes of its owners, being taught to chase men instead of deer.

This Dog was employed with terrible success in the invasion of America by the Spaniards, and was, in the eyes of the simple natives, a veritably incarnated spirit of evil, of which they had never seen the like, and which was a fit companion to those fearful apparitions which could separate themselves into two distinct beings at will, one with four legs and the other with two, and destroy them at a distance with fiery missiles, against which they were as defenceless as against the lightning from above.

Even in more recent times, the services of these Dogs have been rendered available against the rebel forces of Jamaica, when they rose against the Government, and but for the able assistance of these fierce and sagacious animals, would apparently have swept off the European inhabitants of the island.

THE TERRIER, with all its numerous variations of crossed and mongrel breeds, is more generally known in England than any other kind of Dog. Of the recognized breeds, four are generally acknowledged; namely, the English and Scotch Terriers, the Skye, and the little Toy Terrier, which will be described in their order.

The ENGLISH TERRIER possesses a smooth coat, a tapering muzzle, a high forehead, a bright intelligent eye, and a strong muscular jaw. As its instinct leads it to dig in the ground, its shoulders and fore-legs are well developed, and it is able to make quite a deep burrow in a marvellously short time, throwing out the loose earth with its feet, and dragging away the stones and other large substances in its mouth. It is not a large Dog, seldom weighing more than ten pounds, and often hardly exceeding the moiety of that weight.

Although a light, quick, and lively creature, and fuming with anxiety at the sight or smell of the animals which are popularly termed "vermin," the pure English Terrier will seldom venture to attack a rat openly, although it will be of the greatest service in discovering and unharboring that mischievous rodent. The sport which this Dog prefers is, that itself should startle the rats, while its master destroys them. If a rat should fasten upon this

Dog, he will yelp and cry piteously, and when relieved from his antagonist, will make the best of his way from the spot; or if the rat should turn to bay, the Dog will usually scamper off and decline the combat. The celebrated rat-killing Terriers, of whose feats so much has been said, were all indebted for their valor to an infusion of the bull-dog blood, which gives the requisite courage without detracting from the shape of the Dog, or adding too much to its size. Of these bull-terrier Dogs, more will be said in their place.

The color of the pure English Terrier is generally black and tan, the richness of the two tints determining much of the animal's value. The nose and the palate of the Dog ought to be always black, and over each eye is a small patch of tan color. The tail ought to be rather long and very fine, and the legs as light as is consistent with strength.

THE SCOTCH TERRIER is a rough-haired, quaint-looking animal, always ready for work or play, and always pleased to be at the service of its master. It is a capital Dog for those whose perverted taste leads them to hunt rats, or any kind of "vermin," and is equally good at chasing a fox to earth, and digging him out again when he fancies himself in safety. It was in former days largely employed in that most cruel and dastardly pursuit of badger-drawing, in which "sport" both the badger and the Dogs were so unmercifully wounded by the teeth of their antagonist, that even the winning Dog was often crippled, and the poor badger reduced to a state of suffering that would touch the heart of any but a hardened follower of these pursuits.

The color of the Scotch Terrier is generally the same as that of the English Dog, saving that the black and tan tints are often besprinkled with gray, so as to give that peculiar modification of coloring which is popularly known by the name of "pepper-and-salt."

There is a peculiar breed of the Scotch Terrier which is called the Dandie Dinmont, in honor of the character of that name in Scott's "Guy Mannering." These Dogs are of two colors; one a light brown with a reddish tinge, termed "mustard," and the other a bluish-gray on the body and tan on the legs, denominated "pepper." These little animals are very courageous; although they often exhibit no proofs of their bold nature until they have passed the age of two years, appearing until that time to be rather cowardly than otherwise. This conduct is supposed to be occasioned by their gentle and affectionate disposition. The legs of this variety of Terrier are short in proportion to the length of the body, the hair is wiry and abundant, and the ears are large, hanging closely over the sides of the head.

THE BULL-TERRIER unites in itself the best qualifications of the sporting Dogs, being very intelligent, apt at learning, delicate of nose, quick of eye, and of indomitable courage. In size it is extremely variable, some specimens being among the smallest of the canine tribes, while others measure as much as twenty inches in height. In this Dog it is quite unnecessary to have equal parts of the bull-dog and the Terrier; for in that case the progeny is sure to be too heavily made about the head and jaws, and not sufficiently docile to pay instant and implicit obedience to the commands of its master. Until these points are removed, the Terrier cross should be continued, so as to restore the light, active form of the Terrier, together with its habit of ready obedience, while the courageous disposition remains. Indeed, the most ferocious Dogs, and the hardest fighters, are generally the immediate offspring of the bull-dog and Terrier, and are often erroneously described under the name of the former animal.

How entirely the external form of the bull-dog can be eradicated, while its dauntless courage remains intact, is shown in the graceful little Terriers which are used for rat-killing, and which are formed on the most delicate model.

The endurance and gallantry of these little creatures are so great that they will permit several rats, each nearly as large as themselves, to fix upon their lips without flinching in the least, or giving any indications of suffering. Yet the badly-bred Dog will yell with pain if even a mouse should inflict a bite upon this sensitive portion of its frame, and will refuse to face its little enemy a second time. One of these highly bred animals, which was celebrated in the sporting world under the title of "Tiny," weighed only five pounds and a half, and yet was known to destroy fifty rats in twenty-eight minutes and five seconds. It is estimated that

this Dog must have killed more than five thousand rats, the aggregate weight of which nearly equals a ton and a half. He could not be daunted by size or numbers, and was repeatedly matched against the largest rats that could be procured.

He used to go about his work in the most systematic and business-like style, picking out all the largest and most powerful rats first, so as to take the most difficult part of the task while he was fresh. When fatigued with his exertions, he would lie down and permit his master to wash his mouth and refresh him by fanning him, and then would set to work with renewed vigor. He was a most excitable little creature during his younger days, running about the room with such preternatural activity that a gentleman to whom he was exhibited declared that he could not distinguish the Dog's head from his tail, or pronounce judgment on the color of his fur.

As he grew older, however, he became more sedate in his demeanor, and used to sit in state every evening on a crimson velvet cushion edged with gold fringe, and flanked with a candle on each side, so that he might be inspected at leisure.

However quiet he might be in external demeanor, he was hardly less excitable in disposition, and actually died from the effects of over-excitement. He happened to hear or to smell a rat which was in a cage in another room; and being chained in an adjoining apartment, and unable even to see the rat, he chafed and fretted himself into such feverish agitation that he died in a short time afterwards, although he was permitted to kill the rat. There are Dogs which have destroyed more rats in less time than this little creature; but none which was nearly so successful in proportion to its size and weight.

A larger variety of the Bull-terrier was formerly in great request for dislodging foxes from their holes, or "earths," as their burrows are technically termed; and one or two of these animals were invariably borne on the strength of each pack of foxhounds. There used to be a special strain of these Dogs, named Fox-terriers, which were bred and trained for this purpose alone.

The mental powers of this Dog are very considerable, and the animal is capable of performing self-taught feats which argue no small amount of intellect. There are several examples of Dogs which could in some degree appreciate the object of money, and which would take a coin to the proper shop and exchange it for food. A well-known black-and-tan Terrier, named Prince, was accustomed to make his own purchases of biscuit as often as he could obtain the gift of a penny for that purpose. On several occasions the baker whom he honored with his custom thought to put him off by giving him a burnt biscuit in exchange for his penny. The Dog was very much aggrieved at this inequitable treatment, but at the time could find no opportunity of showing his resentment. However, when he next received an eleemosynary penny, he wended his way to the baker's as usual, with the coin between his teeth, and waited to be served. As soon as the baker proffered him a biscuit, Prince drew up his lips, so as to exhibit the penny, and then walked coolly out of the shop, transferring his custom to another member of the same trade who lived on the opposite side of the road.

Several instances of a similar nature have been recorded, but in no case does the animal appear to have comprehended the difference of value between the various coins of the realm. The elephant, for example, readily learns to take a coin from a visitor, and to exchange it for apples, cakes, or similar dainties, at a neighboring stall. But he seems to be ignorant of the fact that he ought to receive twice as many cakes for a penny as for a halfpenny, and is quite contented so long as he gives a coin and receives cakes.

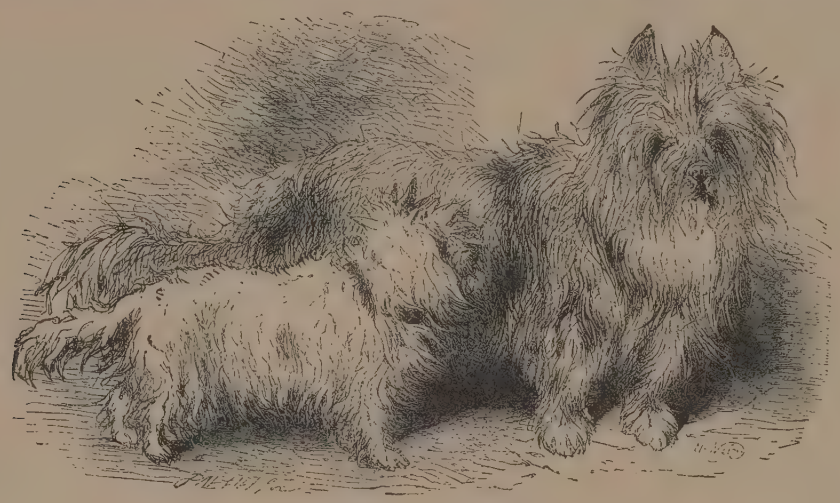
One of these Dogs, named Peter, an inhabitant of Dover, displays great ingenuity in adapting himself to the pressure of circumstances.

Several years since, he had the mishap to fall under the wheels of a carriage, and to be lamed in both his fore-legs. In consequence of this accident his limbs are so enfeebled that he cannot trust their powers in leaping, and therefore has taught himself to jump with his hind-legs alone, after the manner of a kangaroo. He can spring upon a chair or on a low wall without any difficulty, and does so after the usual manner of Dogs. But when he is forced to return again to earth he mistrusts his fore-limbs, and alights upon his hinder feet, making one or two small leaps upon those members before he ventures to place his fore-feet on the ground.

When he is accompanying his master in the fields, and comes to a gate or a gap in a wall, he dares not leap through the aperture, as most Dogs would do, but hops up, and then down again, upon his hind-feet alone.

The real Bull-terrier of the first cross is a marvellously brave animal, falling but little short in courage from his bull-dog ancestor, and very far exceeding that animal in agility and intellectual quickness. Fear seems to make no part of a good Bull-terrier's character; and he dashes with brilliant audacity at any foe which his master may indicate to him, or which he thinks he ought to attack without orders. Mr. Andersson, in his valuable work entitled "Lake Ngami," gives an account of the courage and sagacity of one of these animals which accompanied him in his travels through South-western Africa. He had wounded a rhinoceros, which ran a few hundred yards, and then came to a stand.

"At break of day my men went on his trail. He had still strength enough to make a dash at them; and would probably have laid hold of some of them, had not a small bitch (half Terrier and half bull-dog, called Venus, in derision of her ugliness) caught the enraged animal



SKYE TERRIER.—*Canis familiaris.*

by the lower lip, where she stuck with such tenacity that the rhinoceros, with all his fury, was unable to shake her off. She only relinquished her hold when her huge antagonist was fairly laid prostrate by a ball.

"But the sagacity of this favorite Dog was as great as her courage. Being now in a game country, all sorts of beasts of prey abounded, more especially jackals, which might be seen running about by dozens. In order not to frighten the elephants, and other large animals, we were in the habit of encamping some little way from the water, to which Miss Venus regularly resorted to bathe and drink. On perceiving a jackal she instantly crouched, looking very timid. Reynard, mistaking her posture for an indication of fear, and probably thinking that from her diminutive size she would prove an easy conquest, boldly approached his supposed victim. But he had reckoned without his host, for the instant that the cunning Dog found her antagonist sufficiently near, she leaped like a cat at his throat, and, once there, the beast had no chance.

"She then returned to camp, where her contented looks and bleeding jaws soon attracted the attention of the men, who immediately went on her track and brought the jackal, who was valued on account of his fur."

The quaint-looking Skye Terrier has of late years been much affected by all classes of Dog-owners, and for many reasons deserves the popularity which it has obtained.

When of pure breed the legs are very short, and the body extremely long in proportion to the length of limb; the neck is powerfully made, but of considerable length, and the head

is also rather elongated, so that the total length of the animal is three times as great as its height. The "dew-claws" are wanting in this variety of domestic Dog. The hair is long and straight, falling heavily over the body and limbs, and hanging so thickly upon the face that the eyes and nose are hardly perceptible under their luxuriant covering. The quality of the hair is rather harsh and wiry in the pure-bred Skye Terrier; for the silky texture of the generality of "toy" Skyes is obtained by a cross with the spaniel. It is easy to detect the presence of this cross by the scanty appearance of the hair on the face.

The size of this animal is rather small, but it ought not to imitate the minute proportions of many "toy" Dogs. Its weight ought to range from ten to seventeen or eighteen pounds. Even amongst these animals there are at least two distinct breeds, while some Dog-fanciers establish a third.

It is an amusing and clever Dog, and admirably adapted for the companionship of mankind, being faithful and affectionate in disposition, and as brave as any of its congeners, except that epitome of courage, the bull-dog. Sometimes, though not frequently, it is employed for sporting purposes, and is said to pursue that avocation with great credit.

A HISTORY, however short, of the Dogs would be incomplete without some reference to that terrible disease called "Hydrophobia," which at times arises among the canine race, and converts the trusted companion into an involuntary foe. From some cause, which at present is quite unexplained, the bite of a Dog which is affected with this terrible malady, or even the mere contact of his saliva with a broken skin, becomes endued with such deadly virulence, that the unfortunate person upon whom such an injury is inflicted is as certain to die as if he had been struck by the poison-fangs of the rattlesnake or cobra.

As far as is known, this dread malady appears to originate only in the canine tribe, being communicable to almost every other description of animal, man not excepted, and dooming them to a most painful illness and death. It is worthy of consideration, that the Dog does not perspire through the skin, and that the tongue and throat offer the only means by which the animal can avail itself of that needful exhalation. The symptoms of this malady are rather various in different individuals, but yet are of the same type in all.

There is an entire change of manner in the animal. The affectionate, caressing Dog becomes suddenly cross, shy, and snappish; retreating from the touch of the friendly hand as if it were the hand of a stranger. His appetite becomes depraved, and, forsaking his ordinary food, he eagerly swallows pieces of stick, straws, or any other innutritious substances that may lie in his way. He is strangely restless, seeming unable to remain in the same position for two seconds together, and continually snaps at imaginary objects which his disordered senses image in rapid succession before his eyes. Strange voices seem to fall upon his ears, and he ever and anon starts up and listens eagerly to the sounds which so powerfully affect him. Generally, he utters at intervals a wild howl, which tells its fearful tale even to unpractised ears, but in some cases the Dog remains perfectly silent during the whole of his illness, and is then said to be afflicted with the dumb madness. In most instances, the Dog is silent during the latter stages of the illness.

Before the disease has developed itself to any extent, the poor creature becomes thoughtful and anxious, and looks with wistful eyes upon his friends, as if beseeching them to aid him in the unknown evil that hangs so heavily upon him. He then retires to his usual resting-place, and sluggishly lies upon his bed, paying scarcely any attention to the voice of his master, but strangely uneasy, and ever and anon shifting his posture, as if endeavoring to discover some attitude that may bring ease and repose to his fevered limbs. Fortunately, the disposition to bite does not make its appearance until the disease has made considerable progress.

In these stages of the malady the Dog is often seen to fight with his paws at the corner of his mouth, as if endeavoring to rid himself of a bone that had become fixed among his teeth, and assumes much of the anxious aspect that is always seen in animals when their respiration is impeded. This symptom may, however, be readily distinguished by the fact that the Dog is able to close his mouth between the paroxysms of his ailment, which he is unable to do when he is affected by the presence of a bone or other extraneous substance in his throat.

There is, indeed, a mechanical hindrance to respiration, which, although not so outwardly apparent as the obstruction which is caused by a bone or similar substance, yet harasses the poor creature quite as painfully. As the poison, which has been infused into and taints the blood of the poor victim, works its dread mission through the frame, it infects some of the fluids that are secreted from the blood, and changes their external aspect as well as their inward essence. The saliva becomes thick and viscid in character, and is secreted in quantities so great that it obstructs the channels of respiration, and gives rise to those convulsive efforts on the part of the Dog which have already been mentioned.

Strangely enough, the infected Dog seems to partake of the serpent nature, and, like the cobra or viper, to elaborate a deadly poison from harmless food. The snake feels but little inconvenience from the accumulation of venomous matter, as it is furnished with receptacles in which the lethal secretion may be lodged until it is needed. But the Dog has no such storehouse, and the poison is therefore diffused through the moisture of the throat and mouth, instead of being concentrated into one locality. There is another curious resemblance between the poison of serpents and that of rabid Dogs; namely, that while the venom of either creature produces such terrible effects when mixed with the blood, it may be swallowed with perfect safety, provided that the lips and mouth are free from sores.

I would offer a suggestion, that the instinct which induces the Dog to bite everything which may come within its reach, is intended to aid the creature in its cure, and that if it could only be induced to bite a succession of lifeless objects, it might rid itself of the venomous influence, and be restored to its normal state of health. So powerfully is this instinct developed, that the poor Dog will bite itself, and inflict the most fearful lacerations on its own nesh, rather than resist the furious impulse which fills its being. Horses and other animals which have been infected with this terrible disease have been known to feel the same necessity, and in default of other victims have torn the flesh from their own limbs.

An unquenchable thirst soon fastens upon the afflicted Dog, and drives him to the nearest spot where he can obtain any liquid that may cool his burning throat.

In the earlier stages of the complaint he laps without ceasing, but when the disease has destroyed the powers of his tongue and throat, he plunges his head into the water as far as the depth of the vessel will permit, in hope of bringing his throat in contact with the cooling fluid. It is generally supposed that a mad Dog will not touch water, and for this reason the malady was termed Hydrophobia, or "dread of water," but it is now ascertained that the animal is so anxious to drink, that he often spills the fluid in his eagerness, and so defeats his own object.

In the last stage of this terrible disease the Dog is seized with an uncontrollable propensity to *run*. He seems not to care where he goes, but runs for the most part in a straight line, seldom turning out of his way, and rarely attempting to bite unless he be obstructed in his course; and then he turns savagely upon his real or fancied assailant, and furiously snaps and bites without fear or reason. Not the least curious fact of this disease is, that it causes a singular insensibility to pain. A rabid Dog will endure terrible injuries without appearing to be conscious of them, and, in many cases, these poor creatures have been known to tear away portions of their own bodies as calmly as if they were lacerating the dead body of another Dog. A similar insensibility to pain is noticeable in human lunatics, who will often inflict the most terrible injuries on their own persons, with the most deliberate and unconcerned air imaginable. The nerves seem to be deprived of their powers, and to be insensible even to the contact of burning coals or red-hot metals. In anger, too, which is in truth a short-lived madness, pain is unfelt, and the severest wounds may be received unheeded.

It is possible that this locomotive instinct of the Dog may give a clue to the cure of this fearful malady, and that if a rabid Dog could be permitted to follow its instinct without molestation it might rid itself of its ailment by means of this unwonted exercise.

By this terrible malady the nerves are excited to the highest degree of tension, and it is not improbable that by violent and continual exercise the system might by enabled to throw off the "peccant humors" that infect every particle of the blood as it circulates through the veins, and envenom the natural moisture of the Dog's tongue.

There exists a curious parallel to this propensity for exertion in the celebrated Tarantula-dancing which was so famous in Naples during the sixteenth century. Those persons who were affected with this curious disease, which was for many years thought to be the effect of the bite of the Tarantula spider, were impelled to leap and dance continually in a kind of frenzy, until they sank from sheer fatigue. In many cases the dancing would continue for three or four days, and seemed to be cured best by the profuse perspiration which poured from the wearied frames of the dancers. In a similar manner the effects of a serpent's tooth may be driven from the system. When a person has suffered from the bite of a cobra, or other venomous snake, the most effectual treatment is to prevent him from falling into the lethargy which is produced by the poisonous infusion, and to keep him in constant and violent motion.

It is a remarkable fact that the Tarantismus, as this disease is termed, used in many cases to recur at regular annual intervals, as has already been related of the wounds caused by the lion's bite, and is the case with the healed wound which has been inflicted by the teeth of a rabid Dog. So subtle is this influence, and so thoroughly does it pervade the system, that where anger has risen in the mind of a person who has been bitten by a mad Dog, and by taking precaution has felt no evil results, the old sores have become flushed and swollen, and throbbed in unison with the angry feelings that occupied their mind.

How the nature of the Dog can be so utterly changed as to charge its bite with deadly venom, or how it is that the moist saliva of the rabid animal should communicate the disease to other beings, is at present but a mystery. There seems to be an actual infusion of the Dog nature into the animal which is bitten by a rabid Dog, or by one of the creatures which has been inoculated by the bite of one of these terrible beings. It is evident that the virus is resident in the saliva, because the malady has been communicated by the mere touch of the Dog's tongue upon a wound without the infliction of a bite from its teeth. Yet it is equally evident that the poisonous property belongs not to the saliva, but to the influence which is conducted by its means. In some strange fashion the spirit of the angry Dog seems to be infused into the victim of its bite, and it is well known that even where an angry Dog has in the heat of its passion inflicted a wound the result has been very similar to Hydrophobia, though the animal was not affected with that disease. Ordinarily, the bite of a Dog, such as the playful bite of a puppy, though sufficiently painful, carries no danger with it, but if the animal has only been touched with this malady its bite is but too frequently fatal. This death-dealing influence has been proved to remain in the saliva for four-and-twenty hours after the animal's death. Perhaps there may be something of electricity in the fatal influence, which requires a fluid conductor, for if the teeth of the animal have been wiped dry by passing through the clothing of its intended victim no evil results follow.

Not every one that is bitten by a rabid Dog is a sufferer from Hydrophobia, for it is needful that the constitution should be in a fit state to receive the poison, for its influence to produce any effect. We may notice a similar phenomenon among those who are vaccinated. Some persons appear to be almost proof against the vaccine virus, while others feel its effects so powerfully that they are thrown into a temporary fever, and the limb on which the vaccination is performed, swells to such a degree as to be extremely painful to the patient, and sometimes even alarming to the operator. In others, again, no visible effect is produced until they have undergone the operation two or three times, and then the disease develops itself fully and with great rapidity.

A rather remarkable circumstance connected with this subject took place within the last few years. A rabid Dog contrived to bite a large number of victims, including other Dogs, sheep, oxen, and human beings; a surgeon attended the human sufferers, and treated the wounds by the severe application of nitrate of silver. All were treated in the same manner, but although the greater number escaped without further injury, several died from Hydrophobia; and all those in whom the disease made itself manifest were light-haired persons, while those who escaped had dark hair.

The mode of treatment in such dire necessity is fortunately very simple, and can be applied by any one who is possessed of sufficient nerve and presence of mind. A piece of nitrate of silver, or lunar caustic, as it is popularly called, should be cut to a point like a common

cedar-pencil, and applied to every part of the wound that can be reached. In default of the caustic, a hot iron, such as a steel fork, a knitting-needle, a skewer, or any similar household article, may be heated to a glowing redness, and applied in the same manner. The iron should be as hot as possible, for it is efficacious in proportion to its temperature, and is not nearly so painful in application if the heat is sufficiently powerful to destroy the nerves at once. A white-hot iron will not cause nearly so much suffering as if it were applied at a dull red heat.

Washing the injured part, applying cupping-glasses to the wound, and cutting away the surrounding portions, have been recommended by some writers, but are strongly condemned by men of large practical experience. They say that the water which is used for the purpose of washing away the poisonous substance will only dilute it, and render it more fluid for the blood to take up; that the application of a cupping-glass will only draw blood into the wound, and so cause the mixture of the poison with the system; and that in using the knife, the blood which runs from the newly-made incision is apt to overflow into the poisoned locality, and so to convey the venom into the circulation by mixing with the fast-flowing blood as it bathes the enlarged wound.

There are one or two curious circumstances connected with this subject. It is said that the disease of Hydrophobia never originates with the female Dog; and, moreover, that it is most commonly found in the fighting Dogs, and those animals which are kept for the illicit destruction of game. In Africa, and several other hot countries, the malady is unknown, although the animals swarm in very great numbers, and are exposed to the burning sun and the heated atmosphere, without the least assistance from human aid.

THE TURNSPIT.—*Canis familiaris.*

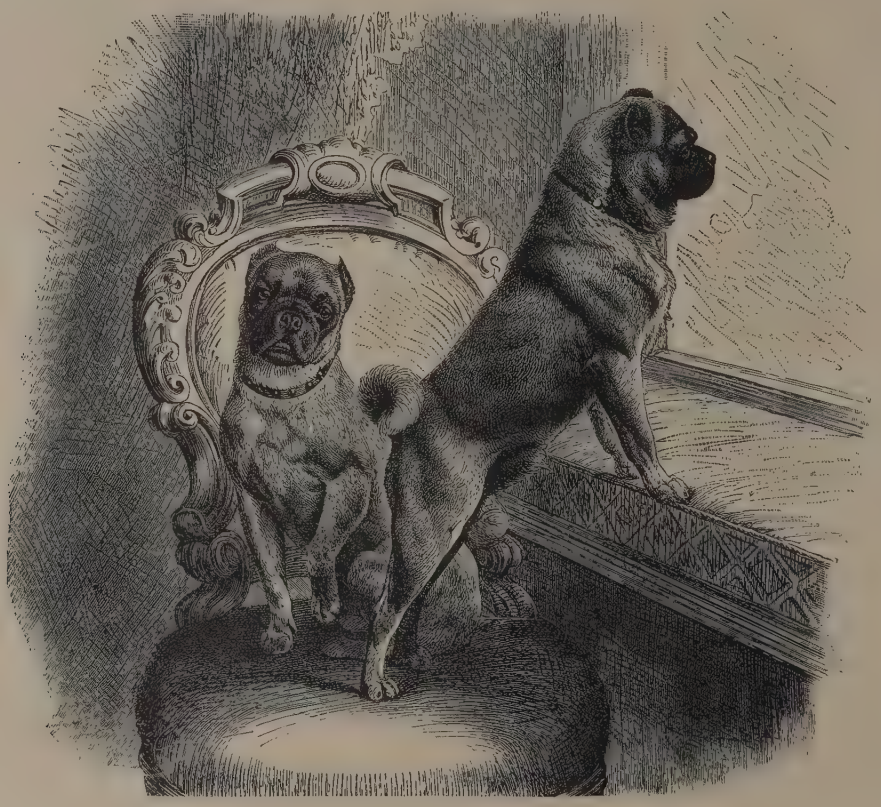
The time during which this disease may remain latent in the system is extremely variable. Sometimes it becomes manifest in a few days, while in other cases the virus has produced no tangible effects until the expiration of several months. In one case, however, the disease made its appearance after the seventh month. Mr. Youatt suggests that if every Dog could be kept in separate quarantine for the space of eight months, "the disease might be annihilated in this country (England), and could only appear in consequence of the importation of some infected animal." This opinion, however, will hardly hold its ground, for although all Dogs that are actually infected might be removed by this course of probation, there is no possibility of warranting that the disease might not again originate in some previously healthy individual, as it must have done in the first instance.

Just as the invention of the spinning-jenny abolished the use of distaff and wheel, which were formerly the occupants of every well-ordained cottage, so the invention of automaton roasting-jacks has destroyed the occupation of the Turnspit Dog, and by degrees has almost annihilated its very existence. Here and there a solitary Turnspit may be seen, just as a spinning-wheel or a distaff may be seen in a few isolated cottages; but both the Dog and the implement are exceptions to the general rule, and are only worthy of notice as being curious relics of a bygone time.

In former days, and even within the remembrance of the present generation, the task of roasting a joint of meat or a fowl was a comparatively serious one, and required the constant attendance of the cook, in order to prevent the meat from being spoiled by the unequal action of the fire. The smoke-jack, as it was rather improperly termed—inasmuch as it was turned,

not by the smoke, but by the heated air that rushed up the chimney—was a great improvement, because the spit revolved at a rate that corresponded with the heat of the fire.

So complicated an apparatus, however, could not be applied to all chimneys, or in all localities, and therefore the services of the Turnspit Dog were brought into requisition. At one extremity of the spit was fastened a large circular box, or hollow wheel, something like the wire wheels which are so often appended to squirrel-cages; and in this wheel the Dog was accustomed to perform its daily task, by keeping it continually working. As the labor would be too great for a single Dog, it was usual to keep at least two animals for the purpose, and to make them relieve each other at regular intervals. The Dogs were quite able to appreciate



PUG-DOG.—*Canis familiaris molossus fricator.*

the lapse of time, and, if not relieved from their toils at the proper hour, would leap out of the wheel without orders, and force their companions to take their place, and complete their portion of the daily toil.

There are one or two varieties of this Dog, but the true Turnspit breed is now nearly extinct in England. On the Continent, the spits are still turned by canine labor in some localities; but the owners of spit and Dog are not particular about the genealogy of the animal, and press into their service any kind of Dog, provided that it is adequately small, and sufficiently amenable to authority.

THE PUG-DOG is an example of the fluctuating state of fashion and its votaries.

Many years ago the Pug was in very great request as a lapdog, or "toy" Dog, as these little animals are more correctly termed. The satirical publications of the last century are full of sarcastic remarks upon Pug-dogs and their owners, and delighted in the easy task of drawing a parallel between the black-visaged, dumpy-muzzled Dog and the presumed personal attractions of its owner.

By degrees, however, this fashion passed away, as is the wont of fashions to do, and, as

is equally their wont, has again returned in due course of time, and with renewed impetus. Although, in the interregnum that elapsed between the two periods of the Pug-dog's ascendancy, it was in very little request, yet in its recent popularity it has acquired so great a conventional value, that a thoroughly well-bred Dog will fetch as much as a hundred dollars, or even more, if it be a peculiarly fine specimen. The purity of the breed has been scrupulously preserved by one or two British Dog-fanciers, and to them the Pug-dog is indebted for its present position in the popular esteem.

It is a cheerful and amusing companion, and very affectionate in disposition. Sometimes it is apt to be rather snappish to strangers, but this is a fault which is common to all lap-dogs which are not kept in proper order by their possessors. For those who cannot spend much time in the open air it is a more suitable companion than any other Dog, because it can bear the confinement of the house better than any other of the canine species; and, indeed, seems to be as much at home on a carpet as is a canary on the perch of its cage. Moreover, it is almost wholly free from the unpleasant odor with which the canine race is affected.

The head of the Pug-dog ought to be round, and its forehead high, with a short, but not a turned-up, nose. The whole of the fore-front of the face, extending to the eyes, and technically termed the "mask," ought to be of a jetty black, marked clearly on the lighter ground of the face. The line which separates the two tints should be as sharply cut as possible. The tail should curl sharply and tightly round, lying on one side of the hinder quarters, and never standing upon the back. The height of the Pug-dog ought not to exceed fifteen inches, or its weight to be more than ten pounds.

The number of puppies which the Dog produces at a single litter is very large, varying from three or four to fifteen, or even a still greater number. They are born, as is the case with kittens and several other young animals, with closed eyes, and do not open their eyelids for the space of several days. As it is manifestly impossible for the mother to rear the whole of a very large family, their number must be reduced, either by destroying several of the little ones, which of course ought to be the weakest and smallest specimens, or by removing the supernumerary offspring and placing them under the care of another Dog which has lately taken upon herself the maternal duties. In this case it needs not that the wet nurse should be of the same kind with her charge, as it is found that health of constitution and a liberal supply of milk are the only necessary qualifications for that responsible office.

Sometimes the health of the mother will not permit her to rear her progeny; and in that case, if no worthy substitute can be found, the most humane mode of action is to remove the young puppies in succession, and so to avoid too severe a shock to the maternal feelings of their progenitrix. If they are all removed at the same time, the sudden deprivation is very likely to bring on a severe fever, and to endanger the already weakened life of the mother. If the process of removing and destroying the young ones has been repeated more than once, the mother becomes so watchful over her progeny that it is by no means easy to withdraw them without her cognizance. As an example of this maternal vigilance, I am enabled to give an anecdote which has been forwarded to me by Mrs. S. C. Hall, which exhibits not only the good memory of an often bereaved mother, but a most touching instance of maternal affection.

"In our large, rambling, country home, we had Dogs of high and low degree, from the silky and sleepy King Charles down (query, up?) to the stately Newfoundland, who disputed possession of the top step—or rather platform to which the steps led—of the lumbering hall-door with a magnificent Angora ram, who was as tame and almost as intelligent as Master Neptune himself. After sundry growls and butts the Dog and the ram generally compromised matters by dividing the step between them, much to the inconvenience of every other quadruped or biped who might desire to pass in or out of the hall.

"The King Charles, named Chloe, was my dear grandmother's favorite; she was a meek, soft, fawning little creature, blind of one eye, and so gentle and faithful, refusing food except from the one dear hand that was liberal of kindness to her. Chloe's puppies were in great demand; and it must be confessed that her supply was very bountiful, too bountiful, indeed, for out of the four which she considered the proper number at a birth, two were generally

drowned. My grandmother thought that Chloe ought not to raise more than two; Chloe believed that she could educate four, and it was always difficult to abstract the doomed ones from the watchful little mother.

"It so chanced that once, after the two pups had been drowned by one of the stablemen, poor Chloe discovered their little wet bodies in the stable-yard, and brought them to the live ones that remained in her basket. She licked them, cherished them, howled over them, but still they continued damp and cold. Gentle at all other times, she would not now permit even her dear mistress to remove them, and no stratagem could draw her from her basket. At last, we supposed, Chloe felt it was not good for the dead and the living to be together, so she took one of the poor things in her mouth, walked with it across the lawn to the spot where a lovely red thorn-tree made a shady place, dug a hole, laid the puppy in it, came back for the other, placed it with its little relative, scraped the earth over them, and returned sadly and slowly to her duties.

"The story of the Dog burying her puppies was discredited by some of our neighbors; and the next time that Chloe became a mother the dead puppies were left in her way, for my grandmother was resolved that her friends should witness her Dog's sagacity. This time Chloe did not bring the dead to the living, but carried them at once to the same spot, dug their graves, and placed them quietly in it. It almost seemed as if she had ascertained what *death* was."

I am also indebted to the same lady for a short history of canine life, which corroborates the account of assistance requested by one Dog and given by another.

"Neptune, the ram's antagonist, had a warm friendship for a very pretty retriever, Charger by name, who, in addition to very warm affections, possessed a very hot temper. In short, he was a decidedly quarrelsome Dog; but Neptune overlooked his friend's faults, and bore his ill-temper with the most dignified gravity, turning away his head, and not seeming to hear his snarls, or even to feel his snaps.

"But all Dogs were not equally charitable, and Charger had a long-standing quarrel with a huge bull-dog, I believe it was, for it was ugly and ferocious enough to have been a bull-dog, belonging to a butcher,—the only butcher within a circle of five miles. He was very nearly as authoritative as his bull-dog. It so chanced that Charger and the bull-dog met somewhere, and the result was that our beautiful retriever was brought home so fearfully mangled that it was a question whether it should not be shot at once, everything like recovery seeming impossible.

"But I really think Neptune saved his life. The trusty friend applied himself so carefully to licking his wounds, hanging over him with such tenderness, and gazing at his master with such mute entreaty, that it was decided to leave the Dogs together for that night. The devotion of the great Dog knew no change; he suffered any of the people to dress his friend's wounds, or feed him, but he growled if they attempted to remove him. Although after the lapse of ten or twelve days he could limp to the sunny spots of the lawn—always attended by Neptune—it was quite three months before Charger was himself again, and his recovery was entirely attributed to Neptune, who ever after was called Doctor Neptune—a distinction which he received with his usual gravity.

"Now here I must say that Neptune was never quarrelsome. He was a very large liver-colored Dog, with huge, firm jaws, and those small cunning eyes which I always think detract from the nobility of the head of the Newfoundland; his paws were pillows, and his chest broad and firm. He was a dignified, gentlemanly Dog, who looked down upon the general run of quarrels as quite beneath him. If grievously insulted, he would lift up the aggressor in his jaws, shake him, and let him go—*if he could go*—that was all. But in his heart of hearts he resented the treatment his friend had received.

"So when Charger was fully recovered, the two Dogs set off together to the Hill, a distance of more than a mile from their home, and then and there set upon the bull-dog. While we were at breakfast, the butler came in with the information that something had gone wrong, for both Neptune and Charger had come home covered with blood and wounds, and were licking each other in the little stable. This was quickly followed by a visit from the butcher,

crying like a child—the great rough-looking bear of a man—because our Dogs had gone up the Hill and killed his pup 'Blue-nose.' 'The two fell on him,' he said, 'together, and now you could hardly tell his head from his tail.' It was a fearful retribution; but even his master confessed that 'Blue-nose' deserved his fate, and every cur in the country rejoiced that he was dead."

THE DINGO, or Warragal, as it is called by the natives, is an inhabitant of Australia, where it is found in the greatest profusion, being, indeed, a pest of no ordinary character to those colonists who are employed in raising and maintaining large flocks of sheep.

The color of this animal is a reddish-brown, sometimes plentifully sprinkled with black hairs over the back and ribs, the legs retaining the ordinary ruddy hue. Its muzzle is very sharp, as is generally the case with wild Dogs; its ears are sharp, short, and erect; its tail is

DINGO.— *Canis dingo.*

pendent and rather bushy; and its eyes small, cunning, and obliquely placed in the head. It was formerly thought to be an aboriginal inhabitant of Australia, but is now allowed to be an importation from some source which is at present uncertain.

Large packs of these wild Dogs ravage the localities in which they have taken up their residence, and have attained to so high a degree of organization that each pack will only hunt over its own district, and will neither intrude upon the territory which has been allotted to a neighboring pack of Dingos, nor permit any intrusion upon its own soil. For this reason, their raids upon the flocks and herds are so dangerous that the colonists were obliged to call a meeting, in order to arrange proceedings against the common foe. Before the sheep-owners had learned to take effectual measures to check the inroads of these marauders, they lost their flocks in such numbers that they counted their missing sheep by the hundred. From one colony no less than twelve hundred sheep and lambs were stolen in three months.

The tenacity of life which is exhibited by the Dingo is almost incredible, and it appears to cling as firmly to existence as the opossum. Like the last-mentioned animal, the Dingo appears to feign death when it finds that escape is impracticable, and often manages to elude

its opponents by the exercise of mingled craft and endurance. Mr. Bennett, in his well-known "Wanderings," mentions several instances of the wonderful tenacity of life exhibited by the Dingo, and the almost incredible fortitude with which it will submit to wounds of the most fearful description. One of these animals had been overtaken by its exasperated foes, and had been "beaten so severely that it was supposed that all the bones had been broken, and it was left for dead." After its supposed slayer had walked away from the apparently lifeless carcass, he was surprised to see the slain animal arise, shake itself, and slink away into the bush. Another apparently dead Dingo had been brought into the hut for the purpose of being skinned, and had actually suffered the operator to remove the skin from one side of its face before it permitted any symptoms of life or sensation to escape it.

Mr. Bennett further remarks, that this marvellous vitality of the Dingo accounts for the fact that the skeletons of these animals are not found in the places where they have been reported to lie dead. For, although the carrion-devouring beasts and birds will soon carry away every particle of the flesh of a dead animal, they always leave its larger bones as memorials of their ghoul-like repast. There are many similar accounts of the Dingo, and its fast hold of life.

As a general fact, the Dingo is not of a pugnacious character, and would at any time rather run away than fight. But when it is hard pressed by its foes, and finds that its legs are of no use, it turns to bay with savage ferocity, and dashes at its opponents with the furious energy of despair. It carries these uncivilized customs into domesticated life, and even when its restless limbs are subjected to the torpifying thraldrom of chain and collar, and its wild, wolfish nature allayed by regular meals and restricted exercise, it is ever ready to make a sudden and unprovoked attack upon man or beast, provided always that its treacherous onset can be made unseen. After the attack, it always retreats into the farthest recesses of its habitation, and there crouches in fear and silence, whether it has failed or succeeded in its cowardly malice.

A Dingo which was kept for some years at the Zoological Gardens was accustomed to sit on its tail and bay the moon after the manner of dogs, making night hideous with its mournful monotone. Moreover, its voice was not silenced by the genial light of day, but rose continually in dolesome ululation, as if in perpetual lament for its captive lot.

In its native land it is a very crafty animal, rivalling the cunning fox in its ready wit when it feels itself endangered, and oftentimes outwitting even the intellectual power of its human foes. A litter of Dingo cubs was once discovered in a rocky crevice near the Yâs Plains, but as the mother was not with them the discoverer marked the locality, intending to return in a short time and to destroy the whole family at one fell swoop. After leaving the spot for such a length of time as he judged sufficient for the return of the mother, he came back to the den, and to his great discomfiture found it to be deserted. The maternal Dingo had probably seen the intruder, and had carried off her young family into a place of safety as soon as she found the coast clear. It is possible that she might not actually have witnessed the hasty visit which this unwelcome guest had paid to her family mansion, but on her return to her little ones had perceived by her sense of smell the late advent of a strange footstep.

It is generally found that any large group of animals in one country will be represented in another land by creatures of similar character, and not very dissimilar form. In accordance with this general rule, we find that the part which the dingo plays in Australia is taken up in Asia and Africa by several animals belonging to the canine race, of which the most remarkable are the Jackals and certain wolves. From the former animals the continent of Europe is free; and in these comparatively civilized times the wolves which still haunt several portions of Europe are simply looked upon as pests of which the country ought to be rid, and not as holding undisputed possession of the territory, and scouring at will over the land in nightly search after prey.

There are several species of the Jackal, two of which will be noticed and figured in this work.

The common Jackal, or Kholah, as it is termed by the natives, is an inhabitant of India.

Ceylon, and neighboring countries, where it is found in very great numbers, forcing itself upon the notice of the traveller not only by its bodily presence, but by its noisy howling wherewith it vexes the ears of the wearied and sleepy wayfarer, as he endeavors in vain to find repose. Nocturnal in their habits, the Jackals are accustomed to conceal themselves as much as possible during the daytime, and to issue out on their hunting expeditions together with the advent of night. Sometimes, a Jackal will prefer a solitary life, and is then a most provoking neighbor to the habitations of civilized humanity; for it is so voracious in its appetite that it becomes a terribly destructive foe to domesticated animals, and so wily in its nature that it carries on its malpractices with impunity until it has worked dire mischief in home or fold. In these depredations, the audacity of the Jackal is as notable as his cunning. He will wait at the very door, biding his time patiently until it be opened and he may slink through the

JACKAL.—*Canis aureus.*

aperture. Pigs, lambs, kids, and poultry fall victims to his insatiate appetite, and he has been known to steal the sleeping puppies from the side of their mother without detection. The larder suffers as severely from his attacks as the hen-roost, for his accommodating palate is equally satisfied with cooked meat as with living prey.

Always ready to take advantage of every favorable opportunity, the Jackal is a sad parasite, and hangs on the skirts of the larger carnivora as they roam the country for prey, in the hope of securing some share of the creatures which they destroy or wound. On account of this companionship between the large and the small marauders, the Jackal has popularly gained the name of the Lion's Provider. But, in due justice, the title ought to be reversed, for the lion is in truth the Jackal's provider, and is often thereby deprived of the chance of making a second meal on an animal which he has slain. Sometimes, it is said, the Jackal does provide the lion with a meal, by becoming a victim to the hungry animal in default of better and more savory prey.

There is a very unpleasant odor which arises from this creature, nearly as powerful and quite as offensive as that of the fox. In spite, however, of this drawback, the Jackal is often used as an article of food among the natives, and is said, by those who have tried it, to be pleasant to the palate, and very much superior to tough venison. A hungry lion, therefore, may be expected to find but little impediment in the rank odor of a slaughtered Jackal.

In India, the tiger is often followed during his nightly quests by a company of these animals, and in most cases by a single old Jackal, called in the native tongue, the Khole, or Kholah-balloo, whose expressive cries are well understood by the hunters, whether bipedal or quadrupedal. Many a tiger has been discovered and brought to his death by the yell of a Jackal, which led the pursuers on his track. When the tiger has killed some large animal, such as a buffalo, which he cannot consume at one time, the Jackals collect round the carcass at a respectful distance, and wait patiently until the tiger moves off and they can venture to approach.

As soon as the tiger moves away, the Jackals rush from all directions, carousing upon the slaughtered buffalo, and each anxious to eat as much as it can contain in the shortest time. So eager are they after their prey that they are jealous not only of their companions, but of the vultures that gather round every dead animal, and snap fiercely at them as they wheel round on their broad pinions, or try to push their beaks among the noses of the fighting and struggling Jackals. But although they may snap and snarl, they never seem to inflict any real injury. They are so audacious in their hunger that they will follow human hunters, and take possession of the dead game in a marvellously shameless manner.

They always keep a sharp watch for wounded animals, and pursue them with such relentless vigor that they are said never to permit their weakened prey to escape their fangs. One of these wild dogs, as they really seemed to be, has been known to leap at the throat of a wounded Axis deer, and then to hang with such indomitable pertinacity that it resisted all the efforts of its wretched victim to free itself from so terrible a foe. When hanging by its teeth, it contracted its body into as small a compass as was compatible with its size.

Although not a brave animal individually, yet it will, when hard pressed, fight with great ferocity, and inflict extremely painful and dangerous wounds with its long and sharp teeth. It has a great dread of the civilized dog, but has more than once been known to turn the tables on its pursuers, and to call the help of its comrades to its aid. On one of these occasions two greyhounds had been sent in pursuit of a Jackal, which immediately made for a rising ground covered with grass and small bushes. Dogs and Jackal arrived at the spot almost simultaneously, when the Jackal gave a cry of distress, which was immediately answered by the appearance of a small pack of Jackals, which issued in every direction from the cover, and attacked the hounds. The owner of the dogs was at the time impounded in thick mud, and could not reach the spot in time to rescue his hounds from their furious enemies until they had been most severely mangled. One was quite unable to walk, and was carried home by bearers, and the other was so dreadfully bitten over his whole person that he appeared to have been fired at with buck-shot. Both dogs ultimately recovered, but not until the lapse of a long time.

On another occasion, when a pack of hounds was hunting a Jackal, a very much larger pack of Jackals came to the rescue, and in their turn attacked the hounds with such vehemence that they were unable to take the field for many weeks afterwards. So fierce were the assailants in their attack, that even when the hunters came to the aid of their hounds the Jackals flew upon the horses, and were so persevering in their onset that a rescue was not effected without considerable difficulty. If unmolested, the Jackal is harmless enough, and will permit a human being to pass quite closely without attempting to bite.

The Jackal is tolerably susceptible of human influence, and if taken when very young, or if born into captivity, can be brought to follow its master about like a dog, and to obey his orders. If it should be made captive when it has once tasted a free life, it behaves after the manner of the dingo, being shy, suspicious, and treacherous towards those who may come unexpectedly within reach of its teeth. It is rather remarkable that the animal loses its unpleasant odor in proportion to the length of its captivity. The name of "aureus," or golden, is derived from the yellowish tinge of the Jackal's fur. In size it rather exceeds a large fox, but its tail is not proportionately so long or so bushy as the well-known "brush" of the fox.

THE BLACK-BACKED JACKAL is an inhabitant of Southern Africa, being especially abundant about the Cape of Good Hope, from which circumstance it is sometimes termed the Cape

Jackal. In size it equals the common Jackal, but is easily distinguished from that animal by the black and white mottlings which are thickly spread over its back, and give a peculiar richness to the coloring of its fur. Its habits are precisely the same as those of the common Jackal, and need not be separately described.

It is a very cunning as well as audacious animal, and is extremely apt at extricating itself from any dangerous situation into which it has ventured in search of prey.

One of these animals had for several successive nights insinuated itself into a hen-roost, in Pietermaritzberg, and borne away its inmates without being detected or checked. The proprietor of the poultry, finding that his fowls vanished nightly, and not knowing the mode of their departure, vowed vengeance against the robber, whoever he might be, and fixed a spring-gun across the only opening that gave access to the hen-house. In the course of the succeeding night the report of the gun gave notice that the thief had been at his usual work,

BLACK-BACKED JACKAL.—*Canis mesomelas*

and the bereaved owner ran out towards the discharged gun, hoping to find its charge lodged in the dead body of the marauder. However, the thief had made his escape, but had left behind him sure tokens of his punishment in the shape of several heavy spots of blood that lay along the ground for some little distance. Some hairs that were discovered in the cleft of a splintered bar, by which the animal had passed, announced that a Jackal was the delinquent.

In the morning the trail was followed up, but with little success, as it led across some roads where so many footsteps were constantly passing that the blood-spots were hopelessly destroyed, and the scent of the animal broken up by the trails of men and cattle. The road that led to the plains was carefully examined, but no traces of the wounded animal could be discovered. Two days afterwards it was found, with a hind-leg broken, in a bundle of Tambookie grass, in the very middle of the village, and close to a butcher's shambles. The cunning animal evidently knew that if it went to the plains it must die of starvation, and might, moreover, be easily overtaken by its pursuers, so it concealed itself in the very spot where they would least think of looking for it, and where it was within easy reach of food.

The nightly shrieks with which the Black-backed Jackal fills the air are loud and piercing:

but when heard at a distance are thought by some sportsmen to possess a certain melody to initiated ears.

The peculiar dark mottlings of the back form a band that extends from its neck and shoulders to the tail, is very broad in front, passing over the withers as far as the shoulders, and narrowing gradually towards the tail, where it becomes only two inches wide. The tail is of a fawn color, and does not partake of this variable coloring, with the exception of the tip, which is black.

Lieutenant Burton remarks, that among the Somali the morning cry of the Jackal is used as an omen of good or evil, according to its direction and its tone. He also mentions that it is in the habit of attacking the peculiar fat-tailed sheep which inhabit that country, and carrying off their lambs. The fat-burdened tail forms an article of diet which seems to be greatly to the Jackal's taste, and which he procures by leaping suddenly upon the poor sheep, and then making a fierce bite at its tail. The terrified sheep starts off at best speed, and leaves a large mouthful of its tail between the Jackal's teeth. Kids and other small animals fall victims to this insatiate devourer.

THE WOLF.—*Canis lupaster.*

In that country the Jackal, called by the natives "Duwas," dances nightly attendance upon the spotted hyena.

WOLVES.

Few animals have earned so widely popular, or so little enviable, a fame as the Wolves. Whether in the annals of history, in fiction, in poetry, or even in the less honored, but hardly less important, literature of nursery fables, the Wolf holds a prominent position among animals.

There are several species of Wolf, each of which species is divided into three or four varieties, which seem to be tolerably permanent, and by many observers are thought to be sufficiently marked to be considered as separate species. However, as even the members of

the same litter partake of several minor varieties in form and color, it is very possible that the so-called species may be nothing more than very distinctly marked varieties. These voracious and dangerous animals are found in almost every quarter of the globe; whether the country which they infest is heated by the beams of the tropical sun or frozen by the lengthened winter of the northern regions. Mountain and plain, forest and field, jungle and prairie, are equally infested with Wolves, which possess the power of finding nourishment for their united bands in localities where even a single predaceous animal might be perplexed to gain a livelihood.

THE color of the common WOLF is gray, mingled with a slight tinting of fawn, and diversified with many black hairs that are interspersed among the lighter colored fur. In the older

SOUTH AMERICAN WOLF.—*Canis jubatus.*

animals the gray appears to predominate over the fawn, while the fur of the younger Wolves is of a warmer fawn tint. The under parts of the animal, the lower jaw, and the edge of the upper lip, are nearly white, while the interior face of the limbs is of a gray tint. From this latter circumstance the Norwegians, with their usual superstitious dislike to calling an animal by its right name, dignify the Wolf by the title of "Graabeen," or Gray-legs. The equally superstitious Finns prefer the name of "Loajalg," or Broad-foot. Between the ears the head is almost entirely gray, and without the mixture of black hairs, which is found in greatest profusion along the line of the spine.

When hungry—and the Wolf is almost always hungry—it is a bold and dangerous animal, daring almost all things to reach its prey, and venturing to attack large and powerful animals, —such as the buffalo, the elk, or the wild horse. Sometimes it has been known to oppose itself to other carnivora, and to attack so unpromising a foe as the bear. Mr. Lloyd records an instance of this presumption on the part of the Wolves.

During a bear-hunt, when the hunting party was led by a dog that was following the footsteps of a bear, a small herd of Wolves, few in number, suddenly made their appearance, pounced on the dog, and devoured it. They then took up the trail, and when they came up

with the bear entered into battle with him. The fight terminated in favor of the bear; but not without much exertion and great danger to both parties, as was proved by the quantity of bear and Wolf fur that lay scattered about the scene of combat. So severely had the bear been treated that his fur was found to be quite useless when he was killed by the hunters a few days after the conflict.

This is not a solitary example of a fight between bears and Wolves, as the same author mentions a similar combat, which would apparently have had a different result. The bear had retreated to a large tree; and, standing with his back against the trunk, boldly faced his antagonists, and for some time kept them at bay. At last, however, some of the Wolves crept round the tree, and seizing him unexpectedly in the flank, inflicted such severe wounds that he would soon have fallen a victim to their ferocity had not they been put to flight by the approach of some men.

It is by no means nice in its palate, and will eat almost any living animal,—from human beings down to frogs, lizards, and insects. Moreover, it is a sad cannibal, and is thought by several travellers who have noted its habits to be especially partial to the flesh of its own kind. A weak, sickly, or wounded Wolf is sure to fall under the cruel teeth of its companions; who are said to be so fearfully ravenous that if one of their companions should chance to besmear himself with the blood of the prey which has just been hunted down, he is instantly attacked and devoured by the remainder of the pack.

In their hunting expeditions the Wolves usually unite in bands, larger or smaller in number, according to circumstances, and acting simultaneouly for a settled purpose. If they are on the trail of a flying animal, the footsteps of their prey are followed up by one or two of the Wolves, while the remainder of the band take up their position to the right and left of the leaders, so as to intercept the quarry if it should attempt to turn from its course. Woe be to any animal that is unlucky enough to be chased by a pack of Wolves. No matter how swift it may be, it will most surely be overtaken at last by the long, slouching, tireless gallop of the Wolves; and no matter what may be its strength, it must at last fail under the repeated and constant attacks of the sharp teeth.

There is something remarkable about the bite of a Wolf. Instead of making its teeth meet in the flesh of its antagonist, and then maintaining its hold, as is done by most of the carnivora, the Wolf snaps sharply, fiercely, and repeatedly at its opponent or its quarry; delivering these attacks with such furious energy that when it misses its mark its jaws clash together with a sound that has been likened to the sudden closing of a steel-trap. These sharply snapping bites, so rapidly delivered, are of terrible efficacy in destroying an enemy, or bringing down the prey.

Putting aside the differences that exist between the feline and the canine dentition, the general character of the whole form is worthy of notice, and points out the creature as belonging to the group of carnivorous animals which obtains its prey by running it down in a lengthy chase, rather than to those predaceous animals which destroy their prey by a single powerful spring. The limbs are larger in proportion than those of the lion, and the bones are more slenderly made. The head and neck are very differently formed. Those of the lion are intended to serve the purpose of an animal which leaps upon its prey, fixes its teeth in the flesh of its quarry, and there hangs until it has destroyed its prey; but the corresponding portions of the Wolf's anatomy belong evidently to an animal which is not intended by nature to exert the clinging hold of the cat tribe, but to overtake its prey by fair chase, to run, and to bite.

The sharp teeth with which the Wolf is furnished are strong enough to cut their way through substances which might be thought impervious to teeth. A hungry Wolf will devour a raw hide with enviable ease, and, when hard pressed by its unsatisfied appetite, has often been known to make a meal on thick leather traces that had been left unguarded for a few minutes.

Bold as is the Wolf in ordinary circumstances, it is one of the most suspicious animals in existence, and is infected with the most abject terror at the sight of any object to which its eyes, nose, or ears are unaccustomed.

Very fortunately for the hunters, this excess of caution on the part of the Wolf is the

WOLF.

means of preserving their slaughtered game from the hungry maws of the Wolves that ever accompany a hunter, and hang on his steps in hope of obtaining the offal of such animals as he may slaughter, or of securing such creatures as he may wound and fail to kill on the spot. In order to preserve the carcass of a slain buffalo or deer, the hunter merely plants a stick by the side of the animal, and ties to the top of the stick a fluttering piece of linen, or any similar substance, and then goes his way, secure that the Wolves will not dare to approach such an object. In default of a strip of calico or linen, the inflated bladder of the dead animal is an approved "scare-wolf;" and, as a last resource, a strip of its hide is used for that purpose.

To this peculiarity have been owing, not only the preservation of game, but the lives of defenceless travellers. It has several times happened that a band of Wolves have been pressing closely upon the footsteps of their human quarry, and have been checked in their onward course by the judicious exhibition of certain articles of which the Wolves were suspicious, and from which they kept aloof until they had satisfied themselves of their harmlessness. As one article began to lose its efficacy, another was exhibited, so that the persecuted travellers were

BLACK WOLF.—*Canis occidentalis.*

enabled to gain the refuge of some friendly village, and to baffle the furious animals by means which in themselves were utterly inadequate to their effects. A piece of rope trailed from a horse or carriage is always an object of much fear to the Wolves.

When the Wolf is once within a trap, it becomes the most cowardly of animals, and will permit itself to be handled or wounded without displaying the least sign of animation, or attempting to resist the hand of its destroyer. The sensation of imprisonment appears to deprive it of all energy, and it sometimes happens that a trapped Wolf is so entirely destitute of self-control, that it has permitted the hunter to drag it from the trap, and to make it lie passively by his side while he reset the trap for the occupancy of another victim. On one occasion, a pitfall-trap contained two occupants, one a Wolf, and the other a poor old woman, who had unfortunately fallen into the pit when returning from her work. The Wolf was so cowed by finding itself entrapped, that it made no attempt to injure its fellow prisoner, but lay quietly at the bottom of the pit, and was shot in the morning by a peasant.

THE BLACK WOLF of America was thought by some naturalists to be only a variety of the common Wolf, but it is now considered to be a distinct species. Not only does the color

of its fur vary from that of the common Wolf, but there are various differences of structure in the position of the eye, the peculiar bushiness of the hair, and other peculiarities, which have entitled it to rank as a separate species.

The American Wolves partake of the general lupine character, being fierce, dangerous, and cowardly, like their European brethren. They are marvellously pusillanimous when they find themselves fairly inclosed; and even if their prison-house be a large yard they crouch timidly in the corners, and do not venture to attack a human being if he enters the same inclosure. Audubon mentions a curious instance of this strange timidity in so fierce an animal, and of which he was an eye-witness.

A farmer had suffered greatly from the Wolves, and had determined to take his revenge by means of pitfalls, of which he had dug several within easy reach of his residence. They were eight feet in depth, and wider at the bottom than at the top. Into one of these traps three fine Wolves had fallen; two of them being black and the other a brindled animal. To the very great astonishment of M. Audubon, the farmer got into the pit, pulled out the hind-legs of the Wolves as they lay trembling at the bottom, and with his knife severed the chief tendon of the hind-limbs, so as to prevent their escape. The farmer was thus repaying himself for the damage which he had suffered, for the skins of the captured Wolves were sufficiently valuable to reimburse him for his labor and previous losses.

PRAIRIE WOLF.—*Canis latrans.*

Among the Esquimaux the Wolves are caught in traps made of large blocks of ice, and constructed in precisely the same manner as an ordinary mouse-trap with a drop-door. The trap is made so narrow that the Wolf cannot turn himself, and when he is fairly inclosed by the treacherous door, he is put to death by spears, which are thrust through interstices left for that purpose.

THERE is a rather smaller species of Wolf, which is found in great numbers upon the American prairies, and named for that reason the PRAIRIE WOLF. These animals are always found hanging on the outskirts of the numerous herds of bisons that roam the prairies, and pick up a subsistence by assailing the weakly and wounded members of the herd. Small as is each individual Wolf, it becomes a terrible assailant when backed by numbers, and seldom fails to bring to the ground any animal which may be unfortunate enough to attract its attention.

When they have once brought their prey to the ground, they make marvellously short work. There is a scuffle of some two minutes in length, during which the Wolves are so eagerly plying their feet and jaws that nothing is visible except a cloud of dust and hair, in the midst of which is a mass of whisking tails. The dusty cloud then subsides, and the Wolves are seen moving slowly away from the scene of their late repast. They also are in the habit of accompanying the hunters through their long peregrinations over the prairies, always hanging behind at respectful distances, and at night encamping within easy range of the fire. They seem never to injure the hunter or his horse, preferring to make use of his superior powers in procuring them a daily supply of food. They are wise in so doing, as the hunter

seldom requires more than the "hump," tongue, marrow-bones, and skin of the slaughtered bison, and leaves the remainder of the huge carcass for the Wolves.

ANOTHER well-known American Wolf is the COYOTE, or CAJOTE, in which there is something of the vulpine aspect. In habits it resembles the other Wolves. According to European ideas, the flesh of the Wolf would be thought a very strange, and decidedly repulsive, article of diet. But it is found by those who have had practical experience on this subject, that the Wolf, when properly dressed, affords a really excellent dinner, the tables being thus turned on him. The ribs are the portion which are most esteemed.

Like many other wild animals, the Wolf will feign death when it has fallen into the hands of its pursuers, and finds that escape is impossible. So admirably will it achieve this feat that it has often deceived the experienced eyes of the hunter, and, taking advantage of an unguarded moment on his part, has made good its escape. How perseveringly the animal will enact his part may be imagined from the description of a captive Wolf given by Captain Lyon, in his private journal.

The Wolf had been brought on board apparently dead, but as the eyes were observed to wink when an object was passed rapidly before them, a rope was fastened to his hind-legs, and he was suspended from the rigging, with his head downwards. Suddenly he threw off all disguise, and began to snap viciously in all directions; at one time aiming his attacks at the persons who surrounded him, and at another moment curling himself upwards and trying to bite the rope asunder. He was so very full of life that it required several heavy blows on his head, and the employment of a bayonet, to reduce him in reality to the state which he had previously been feigning.

It was formerly supposed that the Wolf was an untamable animal, but it is now known that there are few creatures which are more susceptible of affection than the Wolf, if it be captured when young, and treated rightly. It will follow its master like a dog, will obey his orders readily, will recognize him after a long term of absence, and in all things conduct itself with a propriety that is not always found in the domesticated dogs. Several instances of this tamable disposition of the Wolf are well known. One such example is afforded by the tame Wolf which belonged to Mr. F. Cuvier, and which recognized him after an absence of three years.

A Norwegian gentleman, named Grieff, "reared up two young Wolves until they were full-grown. They were male and female. The latter became so tame that she played with me, and licked my hands, and I had her often with me in the sledge in winter. Once when I was absent she got loose from the chain she was bound with, and was away for three days. When I returned home I went out on a hill, and called 'Where is my Tussa?' as she was named, when she immediately came home, and fondled with me like the most friendly dog. She could not bear other people, but the male, on the contrary, was friendly with others, but not with me, from the moment when he once seized a hen, and I whipped him with a carrier whip. As they were well treated, they got very large and had fine skins."

When Wolves and dogs are domesticated in the same residence, a mutual attachment will often spring up between them, although they naturally bear the bitterest hatred to each other. A mixed offspring is sometimes the result of this curious friendship, and it is said that these half-bred animals are more powerful and courageous than the ordinary dog. Mr. Palliser possessed a remarkably fine animal of this kind, the father of which was a white Wolf, and the mother an ordinary Indian dog. Its fur was white, like that of its Wolf-parent.

When "Ishmah," as the dog was named, was first purchased from its Indian owners, he was so terrified at the white face of his new master, that he always ran away whenever he saw him, and could not be persuaded to come within two hundred yards. Ishmah was then tied up with a cord, but the moment that he was left to himself he held the cord to the ground with his paw, severed it in an instant with his sharp teeth, leaped out of the window, and dashed off to his former owners. After awhile, however, he became reconciled to his white master, and proved to be a most faithful and useful ally; dragging a small sledge that contained the heavier necessaries of a hunter's life, and partaking with his master all the

pleasures and privations of a nomad existence. On account of his wolfish ancestry, he was rather apt to run off and play with the young Wolves instead of attending to his duty, but was never induced to throw off his allegiance. On one occasion the dog saved the life of his master by lying close to him on a bitterly freezing night, and with his long warm fur preserving him from the terrible death by frost.

The Wolf is a rather prolific animal, producing from three to nine young at a litter. In January the mother Wolf begins to prepare her habitation for the expected inmates, a task in which she is protected, and perhaps assisted, by her mate, who has won her in fair fight from his many rivals. He attaches himself solely to one single mate, and never leaves her until the young Wolves are able to shift for themselves. The nest in which the little family is nurtured is softly and warmly lined with dry moss and with the fur of the mother, which she pulls from her own body. March is the usual month for the appearance of the little family, and they remain under the maternal protection for seven or eight months. They begin to eat meat at four or five weeks of age, and are taught by their parents to join in the chase.

In the family *Canidæ* (the Dogs), species are pretty evenly distributed over the two continents, America and Asia. In North America there are ten species, and in South America nine.

The Dog family is well marked by two groups: the Wolves and Foxes.

The Gray Wolf (*Canis occidentalis*). This species is now regarded as distinct from the European form, though naturalists formerly claimed their identity.

Prince Maximilian, of New Wied, Germany, in his "Journey to North America, 1841," says: "This Wolf is"—speaking of the form seen by him in the Western Territories—"distinguished from that of the Eastern States—which resembles the European—by the somewhat smaller size, shorter, thicker snout, somewhat shorter ears, and by the want of the dark strips running down the legs in the European species; also by the color, varying from the ordinary Wolf's-gray to the pure white." This Wolf brings forth in April a litter of from four to nine young, in a burrow.

In Florida, a variety of this Wolf * is found, having a jet black pelt. Audubon states that this kind was very abundant in Henderson, Kentucky, his place of residence, and mentions an instance of the complete domestication of one of these animals.

A singular result of the frequent discharge of fire-arms in the region inhabited by the Coyotes, is seen in their inquisitive habits. So ravenous are they, the discharge of a gun has

* *Note by the Editor.*—THE PRAIRIE WOLF (*Canis latrans*) is intermediate in size between the Fox and the Wolf, resembling the former in the sharpness of its muzzle, and the latter in the form and character of the tail. The description above referring to the "Coyote," which has been named *Canis ochropus*, Esch., applies only to a variety, not to a distinct species. The Prairie Wolf is called also Coyote. Lewis and Clark named it Burrowing Dog. The terms *Canis ochropus* and *Canis latrans* are therefore synonymous.

Dr. Coues has had most excellent opportunities to study this animal, being stationed, as U. S. Army Surgeon, at various posts near which this creature abounds. He gives us, in his usual scholarly and interesting language, the following account: "The Prairie or Barking Wolf (*Canis latrans*, Say), is by far the most abundant carnivorous animal in Arizona, as it also is in almost every part of the West. Practically, the Coyote is a nuisance; theoretically, he commands a certain degree of admiration, viewing his irrepressible positivity of character and his versatile nature. If his genius has nothing essentially noble or lofty about it, it is undeniable that few animals possess so many and so various attributes, or act them out with such dogged perseverance. Ever on the alert, and keenly alive to a sense of danger, he yet exhibits the coolest effrontery when his path crosses ours. The main object of his life seems to be the satisfying of a hunger which is always craving, and to this aim all his cunning, impudence, and audacity are mainly directed." * * *

"It is a singular fact that the howling of two or three Wolves gives an impression that a score are engaged, so many, so long-drawn are the notes, and so uninterruptedly are they continued by one individual after another. A short, sharp bark is sounded, followed by several more in quick succession, the time growing faster and the pitch higher, till they run together into a long-drawn, lugubrious howl in the highest possible key. The same strain is taken up again and again by different members of the pack, while from a greater distance the deep, melancholy baying of the more wary Lobo breaks in, to add to the discord, till the very leaves of the trees seem quivering to the inharmonious sounds. It is not true, as asserted by some, that the Coyotes howl only just after dark and at daylight. They are rarely, if ever, heard in the daytime, though frequently to be seen, especially in secluded places." * * *

"There is abundant evidence that the Coyote will cross and bear fertile offspring with the domestic dog. The hybrid is said to possess the bad qualities of both parents, and the good ones of neither." It brings forth in May, five or six puppies.

no terrors for them, but they have learned to connect the sound with its usual results, and immediately appear on such occasions ready to take advantage of a stray or overlooked bit of game.

ACCORDING to some systematic naturalists the FOXES are placed in the genus Canis, together with the dogs and the wolves. Those eminent zoologists, however, who have arranged the magnificent collections in the British Museum, have decided upon separating the Foxes from the dogs and wolves, and placing them in the genus Vulpes. To this decision they have come for several reasons, among which may be noted the shape of the pupil of the eye, which in the

A GROUP OF FOXES.

Foxes is elongated, but in the animals which compose the genus Canis is circular. The ears of the Foxes are triangular in shape, and pointed, and the tail is always exceedingly bushy.

A very powerful scent is poured forth from the Fox in consequence of some glands which are placed near the root of the tail, and furnish the odorous secretion. Glands of a similar nature, but not so well developed, are found in the wolves. The tenacity with which this scent clings to any object which it has touched is quite extraordinary. I remember an instance when a Fox was captured by an old laborer, in revenge for killing his fowls, and which he exhibited in an outhouse for a short time. The animal could not have been in the shed for more than twenty minutes, and yet the odor which it evolved was so pertinaciously adherent to everything which had been touched by the animal that the shed was not free from the tell-tale scent for many weeks.

At night, while walking over various roads, I have frequently been aware that a Fox had crossed the path, and could have followed up the scent for some distance.

It is by this scent that the hounds are able to follow the footsteps of a flying Fox, and to run it down by their superior speed and endurance. The Fox, indeed, seems to be aware that its pursuers are guided in their chase by this odor, and puts in practice every expedient that its fertile brain can produce in order to break the continuity of the scent, or to overpower it by the presence of other odors, which are more powerful, though not more agreeable. A hunted Fox will make the most extraordinary leaps in order to break the line of scent, and throw the hounds on a false track. It will run for a considerable distance in a straight line, return upon its own track, and then make a powerful spring to one side, so as to induce the dogs to run forward while it quietly steals away. It will take every opportunity of perfuming, or rather of scenting, itself with any odorous substance with which it can meet, in the hope of making the hounds believe that they have mistaken their quarry. In fine, there are a thousand wiles which this crafty animal employs, and which are related by every one who has watched a Fox or hunted it.

Even when tamed it preserves its singular cunning. A tame Fox, that was kept in a stable-yard, had managed to strike up a friendship with several of the dogs, and would play with them, but could never induce the cats to approach him. Cats are very sensitive in their nostrils, and could not endure the vulpine odor. They would not even walk upon any spot where the Fox had been standing, and kept as far aloof as possible from him.

The crafty animal soon perceived that the cats would not come near him, and made use of his knowledge to cheat them of their breakfast. As soon as the servant poured out the cats' allowance of milk, the Fox would run to the spot and walk about the saucer, well knowing that none of the rightful owners would approach the defiled locality. Day after day the cats lost their milk until the vulpine stratagem was discovered, and the milk was placed in a spot where it could not be reached by the Fox. There were three cats attached to the stables, and they all partook of the same detestation; so that their abhorrence of the vulpine odor seems to belong to the general character of cats, and not to the fastidious individuality of a single animal. He was also very successful in cheating the dogs of their food, achieving his thefts by the force of superior intellect.

The same animal was cunning enough to procure a supply of milk, even after he had been prevented from robbing the cats. On one occasion, as the dairymaid was passing along with her pails, the Fox went up to her, and brushed himself against one of the milk-pails. In consequence of this contact, the milk became so tainted with the smell of the Fox that the dairymaid did not venture to bring it to the house, and rather thoughtlessly poured it out into a vessel, and gave it to the Fox. The crafty animal took advantage of the circumstance, and watched for the coming of the maid with her pails, in order to repeat the process. Several times he succeeded in his project, but when he found that the spoiled milk was given to the pigs, instead of being appropriated to his own use, he ceased his nefarious attempts.

He detested all ragged beggars, and was so energetic in his hostile demonstrations, that he realized the truth of the proverb, "Set a thief to catch a thief." The horses hated him with as thorough a detestation as that in which the cats held him. His presence in the stable would set the horses in confusion, and make them plunge about in a restless and uneasy manner.

The Fox resides in burrows, which it scoops out of the earth by the aid of its strong digging paws, taking advantage of every peculiarity of the ground, and contriving, whenever it is possible, to wind its subterranean way among the roots of large trees, or between heavy stones. In these "earths," as the burrows are called in the sportsman's phraseology, the female Fox produces and nurtures her young, which are odd little snub-nosed creatures, resembling almost any animal rather than a Fox. She watches over her offspring with great care, and teaches them by degrees to subsist on animal food, which she and her mate capture for that purpose.

The color of the common Fox is a reddish-fawn, intermixed with black and white hairs. The hair is long and thick, being doubly thick during the colder months of the year, so that the fur of a Fox which is killed in the winter is more valuable than if the animal had been slain in the hot months. The tail, which is technically termed the "brush," is remarkably

bushy and partakes of the tints which predominate over the body, except at the tip, which is white. The height of this animal is about a foot, and its length about two feet and a half, exclusive of the tail.

THERE are several species of Foxes, which are found in various parts of the globe, some of which, such as the AMERICAN FOX, or MAKKEESHAW, sometimes called the Cross Fox, the Kit Fox, and the Arctic Fox, are tolerably familiar animals. The American Fox is very variable in the color and markings of its fur, some specimens being of a pale yellow, some being blackish in their general tinting, and some of a reddish-fawn, while some specimens are remarkable for the manner in which the black, the white, the yellow, and the fawn are dispersed over the body and limbs. In almost every specimen there is a darkish transverse stripe over the shoulders, giving to the animal the title of Cross Fox.

SILVER FOX OF OUR SOUTHERN STATES.—*Vulpes fulvus*

This animal has its full share of the crafty spirit which is so notable in the nature of all Foxes. One of them, on whose track the hounds had been often laid, used always to baffle them at one particular point, the crest of a rather steep hill. Up to this spot the scent was perfectly good; but at that particular spot the scent vanished, and so the Fox was lost. One of the disappointed hunters was so indignant at his repeated failures that he determined to lay aside the chase for a day, and to devote himself to the discovery of the means by which the creature could so invariably escape from the hounds and men. He therefore concealed himself near the charmed spot, and watched with much interest the proceedings of the hunted animal.

The Fox, after being driven from his cover, led the hounds a long chase through woods, ponds, and thickets, and at last came at full speed towards the crest of the hill. As soon as he had reached the spot, he laid himself down and pressed himself as closely as possible to the ground. Presently the hounds came along in full cry, and with a blazing scent, darting over the hill in hot pursuit, and never stopping until they reached the bottom of the hill. As soon as the last hound had passed, the Fox resumed his legs, crept quietly over the brow of the hill, and returned to his covert at leisure.

Another of these creatures made use of a very cunning device for the same purpose. In this instance, he always led his pursuers to the edge of a cliff that rose perpendicularly for several hundred feet, and then disappeared. The hunters had often examined the spot, and unsuccessfully, for it seemed that no wingless animal could venture to take such a fearful leap. The secret was, however, at last discovered by a concealed spy. The crafty Fox was seen coming quite at his leisure to the edge of the cliff, and then to look down. Some ten feet

below the edge there was a kind of break in the strata of stone, forming a kind of step about a foot in width. By means of his claws the Fox let himself down upon this step, and then disappeared in a hollow which was invisible from above.

A man was lowered by ropes to the spot, and found that there was a wide fissure in the rock, to which the stony step formed an entrance. On searching the cavern, it was found to have another and an easy outlet upon the level ground above. The Fox, however, never used this entrance when the hounds were on his trail, but cut off the scent by scrambling over the cliff, and then emerging at the other outlet without danger of discovery.

Mr. C. W. Webber narrates an equally curious instance of the cunning of a Fox in escaping from his pursuers:

"There was a certain briary old field of great extent, near the middle of which we could, on any morning of the year, start a gray Fox. After a chase of an hour or so, just enough to blow the dogs and horses well, we invariably lost the Fox at the same spot, the fence-corner of a large plantation, which opened into a heavy forest on one side of this old field. The frequency and certainty of this event became the standing joke of the country. Fox-hunters from other neighborhoods would bring their pack for miles, to have a run out of this mysterious Fox, in the hope of clearing up the mystery. But no. They were all baffled alike. We often examined the ground critically, to find out, if possible, the mode of escape, but could discover nothing that in any way accounted for it, or suggested any theory in regard to it. That it did not fly was very sure; that it must escape along the fence in some way was equally so. My first idea was, that the animal, as is very common, had climbed upon the top rail of the fence, and walked along it to such a distance, before leaping off, that the dogs were entirely thrown out. I accordingly followed the fence with the whole pack about me, clear round the plantation, but without striking the trail again, or making any discovery.

"The affair now became quite serious. The reputation of our hounds was suffering; and, besides, I found they were really losing confidence in themselves, and would not run with half the staunch eagerness which had before characterized them. The joke of being regularly baffled had been so often repeated that they now came to consider it a settled thing that they were never to take another Fox again, and were disposed to give up in despair. Some of the neighbors had grown superstitious about it, and vowed that this must be a weir Fox, who could make himself invisible when he pleased.

"At last I determined to watch at the fence-corner, and see what became of the Fox. Within about the usual time I heard him heading towards the mysterious corner, as the voices of the pack clearly indicated. I almost held my breath in my concealment, while I watched for the appearance of this extraordinary creature. In a little while the Fox made his appearance, coming on at quite a leisurely pace, a little in advance of the pack. When he reached the corner, he climbed in a most unhurried and deliberate way to the top rail of the fence, and then walked along it, balancing himself as carefully as a rope-dancer. He proceeded down the side of the fence next to the forest in which I was concealed.

"I followed cautiously, so as to keep him in view. Before he had thus proceeded more than two hundred yards, the hounds came up to the corner, and he very deliberately paused and looked back for a moment, then he hurried along the fence some paces farther, and when he came opposite a dead but leaning tree which stood inside the fence, some twelve or sixteen feet distant, he stooped, made a high and long bound to a knot upon the side of its trunk, up which he ran, and entered a hollow in the top where it had been broken off, nearly thirty feet from the ground, in some storm. I respected the astuteness of the trick too much to betray its author, since I was now personally satisfied; and he continued for a long time, while I kept his secret, to be the wonder and the topic of neighboring Fox-hunters, until at last one of them happened to take the same idea into his head, and found out the mystery. He avenged himself by cutting down the tree, and capturing the smart Fox.

"The tree stood at such a distance from the fence that no one of us who had examined the ground ever dreamed of the possibility that the Fox would leap to it; it seemed a physical impossibility, but practice and the convenient knot had enabled cunning Reynard to overcome it with assured ease."

ONE of the most celebrated species of the Foxes is the ARCTIC FOX, called by the Russians PESZI, and by the Greenlanders TERRIENNIAK. This animal is in very great repute in the mercantile world on account of its beautifully silky fur, which in the cold winter months becomes perfectly white. During the summer the fur is generally of a gray, or dirty brown, but is frequently found of a leaden gray, or of a brown tint with a wash of blue. Towards the change of the seasons the fur becomes mottled; and by reason of this extreme variableness has caused the animal to be known by several different titles. Sometimes it is called the White Fox, sometimes the Blue Fox, sometimes the Sooty Fox, sometimes the Pied Fox, and sometimes the Stone Fox.

This animal is found in Lapland, Iceland, Siberia, Kamschatka, and North America, in all of which places it is eagerly sought by the hunters for the sake of its fur. The pure white

ARCTIC FOX.—*Vulpes lagopus.*

coat of the winter season is the most valuable, and the bluish-gray fur of the summer months is next to the white the color that is most in request. The soles of the feet are thickly covered with hair, from which circumstance it has derived its name of Lagopus, or hairy foot.

It is found that this animal possesses the power of imitating the cries of the birds on which it loves to feed, and it is probable that it employs this gift for the purpose of decoying its prey to their destruction. Although it is sufficiently cunning in obtaining its food, it seems to be remarkably destitute of the astute craft which aids the generality of the Foxes to avoid hidden dangers or to baffle their foes. It is easily induced to enter a trap, and will generally permit a hunter to approach within range of an easy shot. It is true that, when a human being approaches their burrows, the inmates retire into their homes; but as they continually protrude their heads and yelp at their foe, the precaution is to very little purpose.

In size, the Arctic Fox is not the equal of the English species, weighing only eight pounds on an average, and its total length being about three feet. The eye is of a hazel tint, and very bright and intelligent. It lives in burrows, which it excavates in the earth during the summer months, and prefers to construct its simple dwellings in small groups of twenty or thirty.

The Vulpine, or Fox-like group, is distinguished by having the eye pupil elliptical, and a more slender head. Some important anatomical differences are noticed.

The American Fox was long regarded identical with the Red Fox of Europe (*Vulpes vulgaris*). Differences exist, though slight. The American Fox has a more silky, softer, and longer fur. The muzzle is longer; the eyes are placed nearer together, and the feet are larger.

The Cross Fox—a variety—is so called on account of a more or less distinct band of a darker color crossing another on the shoulders. It is common in New York, but is not often seen south of Pennsylvania. It is larger than the Red variety, and has a more bushy tail.

The Prairie Fox (*Vulpes macrourus*) is regarded as the finest species known. It is the largest. Its color is much like that of the Red Fox. The muzzle is more pointed than in any other species. Its total length, from nose to tip of tail, is thirty-three inches. The ears are very large and acutely pointed. Lewis and Clark called it the Large Red Fox of the Plains. Audubon and Bachman named it *Vulpes utah*.

The Kit Fox, or Swift Fox (*Vulpes velox*), is the Silver-gray Fox of earlier writers. It is quite distinguished from the Red Fox, and others, by its broader head, smaller ears, and

OTOCYON.—*Otocyon lalandii.*

shorter legs, cylindrical and bushy tail. Its litter of young varies from four to eight. It is common to the Western States.

The Arctic Fox is an exceedingly beautiful creature, being of a pure snowy white in every part of its pelt. It inhabits the region of the Arctic Circle, and is seldom seen farther south.

The Gray Fox (*Urocyon cinereo argentatus*, Schreb, Coues) is common to the Middle States, California, and the North Western States. It is distinguished by having a concealed mane of stiff hairs. Its general aspect is of a handsome silver-gray. The pelt is less soft and bushy, and the body, therefore, seems somewhat smaller than of other species.

The Coast Fox (*Vulpes littoralis*) is another of this group, distinguished by the stiffer hairs. Sometimes called the Short-tailed Fox. It is hardly more than half the size of the preceding species. The tail is only about one third the length of the body. Its pelt above is hoary and black. The sides of the neck, fore-legs and fore part of thighs are of a dull cinnamon color. The chin and sides of the muzzle, black. The tail has a concealed mane of stiff hairs. This little Fox is singularly tame.

THE LITTLE animal which is known by the name of the ASSE, or the CAAMA, is an inhabitant of Southern Africa, and is in great request for the sake of its skin, which furnishes a very valuable fur.

It is a terrible enemy to ostriches and other birds which lay their eggs in the ground, and is in consequence detested by the birds whose nests are devastated. The ingenuity of the Caama in procuring the contents of an ostrich's egg is rather remarkable. The shell of the

egg is extremely thick and strong; and as the Caama is but a small animal, its teeth are unable to make any impression on so large, smooth, hard, and rounded an object. In order, therefore, to obviate this difficulty, the cunning animal rolls the egg along by means of its fore-paws, and pushes it so violently against any hard substance that may lie conveniently in its path, or against another egg, that the shell is broken and the contents attainable.

The fur of this animal is highly esteemed by the natives for the purpose of making "karosses," or mantles. As the Asse is one of the smallest of the Foxes, a great number of skins are needed to form a single mantle, and the manufactured article is therefore held in high value by its possessor. Indeed, so valuable is its fur, that it tempts many of the Bechuana tribes to make its chase the business of their lives, and to expend their whole energies in capturing the animal from whose body the much-prized fur is taken.

The continual persecution to which the Caama is subjected, has almost exterminated it in the immediate vicinity of Cape Town, where it was formerly seen in tolerable plenty. Gradually, however, it retreats more and more northward before the tread of civilized man, and at the present day is but very rarely seen within the limits of the colony.

FENNEC.—*Vulpes zaarensis.*

The two animals which now claim our attention bear a considerable external resemblance to each other, albeit that similarity extends not to their formation. So different are they from each other, that they have been placed in a distinct genera by the almost unanimous voice of systematic naturalists.

The former of these animals, the Otocyon, or Eared-dog, derives its name from the very great proportionate length of its ears. It is smaller than the Fox, and is of a tolerably uniform gray color, except on the tail, which is covered with long black hair, and on the limbs, which are of a darker hue than the body. The ears are erect, well covered with fur, and nearly equal to the head in length. It is an inhabitant of Southern Africa. In several anatomical points, especially in the arrangement and shape of its teeth, it may be distinguished from the following animal.

The Fennec, or Zerda, is an inhabitant of Africa, being found in Nubia and Egypt. It is a very pretty and lively little creature, running about with much activity, and anon sitting upright and regarding the prospect with marvellous gravity. The color of the Fennec is a very pale fawn, or "isabel" color, sometimes being almost of a creamy whiteness. The tail is bushy, and partakes of the general color of the fur, except at the upper part of the base and the extreme tip, which are boldly marked with black. The size of the adult animal is very inconsiderable, as it measures scarcely more than a foot in length, exclusive of the bushy tail, which is about eight inches long.

It is said that the Fennec, although it is evidently a carnivorous animal, delights to feed upon various fruits, especially preferring the date. Such a predilection is according to vulpine

and canine analogies, for the common Fox is remarkably fond of ripe fruits, such as grapes or strawberries, and the domestic dog is too often a depredator of those very gardens which he was enjoined to keep clear from robbers. But that the animal should enjoy the power of procuring that food in which it so delights is a very extraordinary circumstance, and one which would hardly be expected from a creature which partakes so largely of the vulpine form and characteristics. The date-palm is a tree of a very lofty growth, and the rich clusters of the fruit are placed at the very summit of the bare, branchless stem. Yet the Fennec is said to to be able to climb the trunk of the date-palm, and so procure for itself the coveted luxury.

This creature presents so strange a medley of characteristics that it has proved a sad stumbling-block to systematic zoologists, and has been so frequently transferred by them from one portion of the animal kingdom to another, that its position in their catalogues seems to vary as often as the different lists are published. One celebrated naturalist considers the Fennec to belong to the civets and genetts; another ranks it with the hyenas; while a third believes that its true position is among the Galagos. Now, however, it finds a resting-place in the genus Vulpes, being a congener with the various foxes of the Old and New Worlds.

It must here be remembered that the generic distinction of dogs and foxes can hardly be regarded as a settled matter, and that many practical naturalists favor the opinion that the foxes ought to be included in the genus "Canis." That the dog and the fox will produce a mixed offspring is now generally allowed. There are many authenticated accounts of such mixed breeds, dating from the earlier part of the present century up to the present time. Moreover, it has been found that the offspring of the dog and the fox is capable of reproduction when it is again crossed with the dog. Should this experiment be successfully conducted to a still further extent, and the vulpo-canine offspring of both sexes be found capable of mutual reproduction, the difficult question to which we have referred will be finally solved.

Like the veritable foxes, the Fennec is accustomed to dwell in subterranean abodes, which it scoops in the light sandy soil of its native land. Bruce, who claims the honor of introducing this curious little animal to zoological science, avers that it builds its nest in trees. Rüppell, however, who may lay claim to more scientific knowledge than was possessed by Bruce, distinctly contradicts this statement, and asserts that it lives in "burrows" like other foxes.

This curious little animal is not entirely without its use to man; for its fur is of considerable value among the native tribes of the locality wherein it is found. The skin of the Fennec, called "motlose" in the native dialect, is said to furnish the warmest fur in Africa, and is highly prized for that quality. And as, on account of the diminutive size of the animal, a single skin forms but a very small portion of a garment, a mantle which is composed of "motlose" fur is valued very highly, and can with difficulty be purchased from its dark owner.

As is the case with the greater number of predaceous animals, the Fennec is but seldom seen during the daytime, preferring to issue forth upon its marauding expeditions under the friendly cover of night. Even when it has spent some time in captivity, it retains its restless nocturnal demeanor, and during the hours of daylight passes the greater portion of its time in semi-somnolence or in actual sleep. On a comparison with the Otocyon, the Fennec appears at first sight to bear so close a resemblance to that animal that either of the two creatures might easily be mistaken for the other. The slender body, the bushy tail, the sharply pointed snout, and the extraordinarily long ears, are so conspicuously notable that the two animals have frequently been confounded together, and actually figured under the same title. Yet the distinguishing characteristics are so strongly marked as to justify their separation, not only into different species, but into different genera.

It is a quaint little creature in its aspect, and wears an air of precocious self-reliance that has quite a ludicrous effect in so small an animal. The color of its eyes is a beautiful blue, and the "whisker" hairs which decorate its face are long and thick in their texture, and white in their color. The honor of introducing the Fennec into Europe is claimed by two persons; the one being Bruce, the celebrated traveller, and the other being a Swedish gentleman of the name of Skioldebrand. The latter writer was certainly the first person who publicly brought the Fennec before the zoologists of Europe, but is supposed to have succeeded in his ambition by means which were hardly just or honorable.

The Fennec is identical with the fox-like animal that is named "Zerda" by Rüppell, and "Cerdo" by Illiger.

JUST as the Aard-Wolf appears to form the link between the civets and the hyenas, being with some difficulty referred to either group of animals, so the Hunting-Dog seems to be the connecting link between the dogs and the hyenas. Its position, however, in the scale of animated nature is so very obscure that it has been placed by some zoologists among the dogs

HYENA-DOG, OR HUNTING-DOG.—*Lycaon pictus.*

and by others among the hyenas. As, however, the leading characteristic of its formation appears to tend rather towards the canine than the hyenine type, the Hunting-Dog has been provisionally placed at the end of the dogs rather than at the end of the hyenas.

There are many names by which this animal has been called; in the writings of some authors it is mentioned under the title of the Painted Hyena, while by others it is termed the Hyena-Dog. The Dutch colonists of the Cape of Good Hope, where this creature is generally found, speak of it by the name of Wilde Hund, or Wild Dog; and it is also known under the names of Simir and Melbia.

WEASELS, SKUNKS, BADGERS, ETC.

WEASELS.

NEXT in order to the dogs, is placed the large and important family of the WEASELS, representatives of which are found in almost every portion of the earth. There is something marvellously serpentine in the aspect and structure of the members of this family—the Mustélidæ, as they are called, from the Latin word *mustéla*, which signifies a Weasel. Their extremely long bodies and very short legs, together with the astonishing perfection of the

muscular powers, give them the capability of winding their little bodies into the smallest possible crevices, and of waging successful battle with animals of twenty times their size and strength.

First on the list of Weasels are placed the agile and lively Martens, or Marten-Cats, as they are sometimes termed. Two species of Martens are generally admitted into catalogues, although the distinction of the species is even as yet a mooted point. The chief distinction between the Pine and the Beech Martens is the different tint of the throat, which in the former animal is yellow, and in the latter is white. But it is said by many observers that this variation of tint is not of sufficient importance to warrant a separation of the species, and that the

PINE MARTEN.—*Mustela martes.*

different sexes of the same species are marked by varying depth of color in the throat, the male possessing a darker tinge of yellow than the female. There is also a slight difference of size between the two sexes. Taking, however, the arguments which have been adduced on both sides of the question, the balance of probabilities lies strongly on the side of those who consider the yellow-throated and the white-throated Martens to belong to different species.

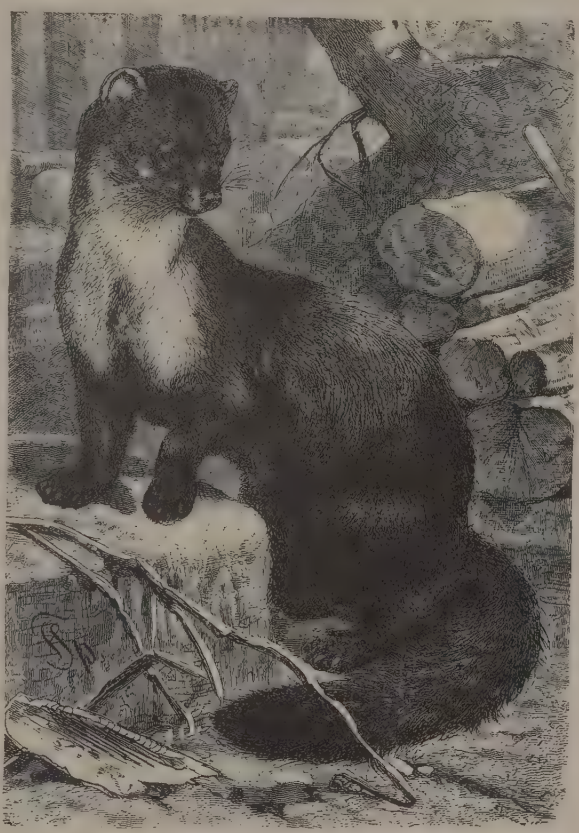
The Pine Marten is so called because it is generally found in those localities where the pine-trees abound, and is in the habit of climbing the pines in search of prey. It is a shy and wary animal, withdrawing itself as far as possible from the sight of man; and although a fierce and dangerous antagonist when brought to bay, is naturally of a timid disposition, and shuns collision with an enemy.

It is a tree-loving animal, being accustomed to traverse the trunks and branches with wonderful address and activity, and being enabled by its rapid and silent movements to steal unnoticed on many an unfortunate bird, and to seize it in its deadly gripe before the startled victim can address itself to flight. It is a sad robber of nests, rifling them of eggs and young, and not unfrequently adding the parent birds to its list of victims.

The fur of the Pine Marten is rather valuable, especially if the animal be killed in the winter. A really fine skin is but little inferior to the celebrated sable, and can hardly be dis-

tinguished from it by inexperienced eyes. It is thought not to be so prolific an animal as the Beech Marten, seldom producing above three or four at a birth, while the latter animal has been known to nurture six or seven young at the same time. If this circumstance be generally true, it goes far towards proving that the Beech and the Pine Marten are really distinct animals. The head of this creature is smaller than that of the Beech Marten, and the legs are proportionately larger.

The length of the Pine Marten is about eighteen inches, exclusive of the tail, which measures about ten inches. The tail is covered with long and rather bushy hair, and is slightly darker than the rest of the body, which is covered with brown hair. The tint, however, is variable in different specimens, and even in the same individual undergoes considerable modifications, according to the time of year and the part of the world in which it is found. It has rather a wide range of locality, being a native of the northern parts of Europe and of a very large portion of Northern America.



BEECH MARTEN.—*Mustela foina.*

The Beech Marten seems to be of rather more frequent occurrence than the Pine Marten, from which animal it may be distinguished by the white tint of the fur on its throat and the upper portion of its breast. On account of this circumstance, it is sometimes called the White-throated Marten. A slight yellow tinge is sometimes observed on its throat. There are several names by which this animal is known, such as the Marteren, the Martern, and the Stone Marten.

In its destructive habits and its thirst for blood, it resembles the animal which has already been described, and has earned for itself the title of "domestic," which was applied to it by Gesner, because it is in the habit of prowling about human habitations, and of concealing itself in the barns and outhouses, for the purpose of gaining access to the poultry.

The Marten seems to be easily tamed to a certain degree, but beyond that point its wild instincts are too firmly rooted for speedy eradication. One of these creatures was procured when young by a shoemaker, and remained with him until it had reached maturity. It then escaped from its adopted home, and commenced a series of depredations among the fowls which were kept by the neighbors, returning every night, and concealing itself in the house. Its destructive energies became so troublesome that it was at last sentenced to death by the united voices of those who had suffered from its depredations, and paid the penalty of its many robberies.

One of the most highly valued of the Weasels is the celebrated Sable, which produces the richly tinted fur that is in such great request. Several species of this animal are sought for the sake of their fur. They are very closely allied to the Martens that have already been described and are supposed by some zoologists to belong to the same species. Besides the

well-known *Martes zibellina*, a North American species is known, together with another which is an inhabitant of Japan. These two creatures, although they are very similar to each other in general aspect, can be distinguished from each other by the different hue of their legs and feet: the American Sable being tinged with white upon those portions of its person, and the corresponding members of the Japanese Sable being marked with black.

The Sable is spread over a large extent of country, being found in Siberia, Kamtschatka, and in Asiatic Russia. Its fur is in the greatest perfection during the coldest months of the year, and offers an inducement to the hunter to brave the fearful inclemency of a northern winter in order to obtain a higher price for his small but valuable commodities. A really perfect Sable skin is but seldom obtained, and will command an exceedingly high price. An

SABLE.—*Martes zibellina.*

ordinary skin is considered to be worth from five to thirty dollars, but if it should be of the very best quality, is valued at fifty to sixty dollars.

In order to obtain these much-prized skins, the Sable-hunters are forced to undergo the most terrible privations, and often lose their lives in the snow-covered wastes in which the Sable loves to dwell. A sudden and heavy snow-storm will obliterate in a single half-hour every trace by which the hunter had marked out his path, and, if it should be of long continuance, may overwhelm him in the mountain "drifts" which are heaped so strangely by the fierce tempests that sweep over those fearful regions. Should he not be an exceedingly experienced hunter, possessed of a spirit which is undaunted in the midst of dangers, and of a mind which is stored with the multitudinous precepts of hunters' lore, he is certain to sink under the accumulated terrors of his situation, and to perish by cold and hunger in the midst of the snow-sea that rolls in huge white billows over the face of the country.

At the best, and when he meets with the greatest success, the privations which he is called upon to undergo are of the most fearful character, and he rarely escapes without bearing on his person the marks of the terrible labor which he has performed.

The Sables take up their abode chiefly near the banks of rivers and in the thickest parts of the forests that cover so vast an extent of territory in those uncultivated regions. Their homes are usually made in holes which the creatures burrow in the earth, and are generally made more secure by being dug among the roots of trees. Sometimes, however, they prefer to make their nests in the hollows of trees, and there they rear their young. Some authors,

however, deny that the Sable inhabits subterranean burrows, and assert that its nest is always made in a hollow tree. Their nests are soft and warm, being composed chiefly of moss, dried leaves, and grass.

Their food is said to partake partially of a vegetable and partially of an animal character, according to the season of the year. In the summer time, when the hares and other animals are rambling about the plains and forests, the Sable takes advantage of their presence, and kills and eats them. But when the severity of the winter frosts has compelled these creatures to remain within their domiciles, the Sable is said to feed upon the wild berries that it finds on the branches. The hunters assert that the Sable is not content to feed only on the hares and such like animals, which constitute the usual prey of the larger Weasels, but that it is in the habit of killing and devouring the ermine and the smaller members of the Weasel tribe. Even birds fall victims to these agile and voracious animals, being often overtaken in their flight among the branches of trees by a well-aimed leap and a sharp stroke of the fore-paws.

THE PEKAN, more popularly termed the WOOD-SHOCK, is a native of Canada and other parts of America, and is of some value on account of its fur, which is nearly as useful, although not so valuable, as that of the sable, with which animal it is very closely allied. The color of

WOOD-SHOCK, OR PEKAN.—*Martes canadensis.*

its fur is generally of a grayish-brown, the gray tint being found chiefly on its back, head, neck, and shoulders, and the legs, tail, and back of the neck marked with a much darker brown.

Its habitation is usually made in burrows, which it excavates on the banks of rivers, choosing that aqueous locality on account of the nature of its food, which consists of fish and various quadrupeds which live near the water. Hunting the Wood-shock is a diversion which is greatly in vogue, as is especially followed by the younger portions of the community, who find in this water-living, earth-burrowing, sharp-toothed animal, a creature which affords plenty of sport to themselves and their dogs, while it is not a sufficiently powerful antagonist to cause any great danger to its foes, if it should be driven to despair and assume the offensive, instead of yielding in sullen silence.

THE POLECAT has earned for itself a most unenviable fame, having been long celebrated as one of the most noxious pests to which the farmyard is liable. Slightly smaller than the marten, and not quite so powerful, it is found to be a more deadly enemy to rabbits, game, and poultry, than any other animal of its size.

It is wonderfully bold when engaged upon its marauding expeditions, and maintains an impertinently audacious air even when it is intercepted in the act of destruction. Not only does it make victims of the smaller poultry, such as ducks and chickens, but attacks geese, turkeys, and other larger birds with perfect readiness. This ferocious little creature has a terrible habit of destroying the life of every animal that may be in the same chamber with itself, and if it should gain admission into a hen-house will kill every one of the inhabitants,

although it may not be able to eat the twentieth part of its victims. It seems to be very fond of sucking the blood of the animals which it destroys, and appears to commence its repast by eating the brains. If several victims should come in its way, it will kill them all, suck their blood, and eat the brains, leaving the remainder of the body untouched.

Even those unpromising animals, the weasels, can be subjected to the wondrous supereminence of the human intellect. The Ferret is well known as the constant companion of the rat-catcher and the rabbit-hunter, being employed for the purpose of following its prey into their deepest recesses, and of driving them from their strongholds into the open air, when the pursuit is taken up by its master. The mode in which the Ferret is employed will be presently related.

Some writers have thought the Ferret to be identical in species with the polecat, and have strengthened this opinion by the well-known fact that a mixed breed between these two animals is often employed by those who study the development and the powers of the Ferret.

THE POLECAT.—*Putorius fœtidus.*

However, the most generally received opinion of the present day considers the Ferret to be a distinct species. Mr. Bell, in his work on the British Quadrupeds, remarks that the different geographical range which is inhabited by these creatures is one of the most striking arguments in favor of the distinction of the species. The polecat is found in the northern parts of Europe, bearing the severest cold with impunity, and able to track its prey for many miles over the snow. But the Ferret is originally a native of Africa, and is most sensitive to cold, often perishing if it be exposed to the frosts of winter. When the Ferret is kept in a state of domestication, the box or hutch in which it resides must be amply supplied with hay, wool, or other warm substances, or the creature will soon pine away and die.

It sometimes happens that a Ferret escapes from its owners, and making its way into the nearest wood or warren, remains in its new quarters until the end of autumn, living quite at its ease, and killing rabbits and game at its leisure. But when the cold weather draws near, and the frosty nights of autumn begin to herald the frosty days of winter, the Ferret will do its best to return to its captivity and its warmer bed, or, failing in its attempt, will die. That a Ferret should escape is by no means an unlikly circumstance, for the creature is so active of limb and so serpentine of body that it can avail itself of the very smallest opening, and, when once at liberty, can conceal itself with such address that it is very rarely recovered.

Some years ago, an escaped Ferret was discovered in its usurped burrow, and most gallantly captured by a young lad who was extremely courageous for his years. He was prowling round a small, thickly-wooded copse, in search of birds' nests, when he saw a sharply-pointed snout protruding from a rabbit-hole in the bank which edged the copse, and a pair of fiery little eyes gleaming like two living gems in the semi-darkness of the burrow. Being a remarkably silent and reticent lad, he told no one of his discovery, but went into the village, and presently returned, bearing a little dead kitten which had just been drowned. He then crept to the foot of the bank which overhung the burrow, and holding the dead kitten by its tail, lowered it into the hole. The Ferret made an immediate spring at the prey which had made so opportune an arrival, and was jerked out of the burrow before it could loosen its hold.

The lad grasped the Ferret across the body, but as he was lying in such a manner that he could only use his left arm, the enraged animal began to bite his hand in the most furious manner. However, the young captor could not be induced to let the Ferret escape, and with great presence of mind whirled the creature round with such rapidity that it was soon rendered almost senseless by giddiness, and gave him an opportunity of grasping it with his right hand. The Ferret could not bite while thus held, and was borne triumphantly home, in spite of the wounds which had been inflicted on the hand. The bite of an enraged Ferret is of a very severe character, and, probably in consequence of the nature of its food, is difficult to heal and extremely painful.

FERRET.—*Mustela furo.*

It is a fierce little animal, and is too apt to turn upon its owner, and wound him severely before he suspects that the creature is actuated by any ill-intentions. I once witnessed a rather curious example of the uncertainty of the Ferret's temper. A lad who possessed a beautiful white Ferret had partially tamed the creature, and thought that it was quite harmless. The Ferret was accustomed to crawl about his person, and would permit itself to be caressed almost as freely as a cat. But on one unfortunate morning, when its owner was vaunting the performances of his *protégée*—for it was a female—the creature made a quiet but rapid snap at his mouth, and drove its teeth through both his lips, making four cuts as sharply defined as if they had been made with a razor.

Still, the Ferret is really susceptible of kind feeling, and has been often known to be truly tamed. One of these animals was accustomed to accompany its master when he took a walk in the country, and was permitted to range at will. Round its neck a little bell was hung, so as to give indications of its presence, but it was so extremely tame that this precaution was hardly needed. It would follow its master like a dog, and if he ran away would hunt his footsteps, anxiously and eagerly seeking for his presence. This was a Polecat-ferret.

When Ferrets are used for the purpose of hunting rabits, their mouths are securely muzzled before they are permitted to enter the burrows; as, if their teeth were at liberty, they would in all probability kill the first rabbit which they met, and remain in the burrow for the purpose of sucking its blood. They are purposely kept without their ordinary meals before they are taken into the field, and are therefore especially anxious to secure their prey. Several modes of muzzling the Ferret are in vogue: some of them being as humane as is consistent with the act of fastening together the jaws of any animal, and others being most shamefully

cruel. Not many years ago, it was the general custom to sew up the lips of the poor creature every time that it was used for hunting, and elaborate descriptions of this process are given in the sporting books of the period. Leathern muzzles are made especially for the purpose, and are the best that can be adopted; but in their absence, the Ferret's mouth can be effectually closed by means of two pieces of string, one of which is placed round the neck and the other under the jaws, and the four ends tied together at the back of the neck.

Almost any Ferret will enter a rabbit-burrow and drive out the inmates, for the rabbits do not even think of resisting their pursuer, and flee before him with all their might. But there are comparatively few Ferrets that will venture to enter a rat-hole, especially after they have suffered once or twice from the sharp teeth of those voracious rodents. If the Ferret is accustomed to chase rabbits, it becomes totally useless for the purposes of the rat-catcher, for it will not venture even to face a well-grown and vicious old rat, and much less will it dare to enter the burrow. After suffering from the bite of a rat, the Ferret is seized with a very great respect for a rat's teeth, and will not willingly place itself within reach of those sharp-edged weapons. As has been graphically said by a practical rat-catcher, to force such a Ferret into a rat-hole is "like cramming a cat into a boot, and as for hunting, it is out of the question."

When a Ferret is possessed of sufficient skill and courage to face its long-tailed foes, and has been perfectly trained to the service, it can achieve wonders in open fight, and is a most valuable animal. As a general fact, a large gray old rat will beat off a Ferret, if it can only back itself into a corner, so as to prevent an attack from behind; but when the Ferret is well trained to the business, it becomes a most destructive rat-slayer. There is a very graphic narrative in Mr. J. Rodwell's work on rats, which not only shows the wonderful powers of the Ferret, but gives a good description of the modes of attack and defence which are practised by both animals.

"One evening I called upon an acquaintance of mine, and found him just going to decide a wager respecting a large male Ferret of the polecat breed, which was to destroy fifty rats within the hour. It must be borne in mind that this Ferret was trained for the purpose.

"The rats were placed in a large square measuring eight or ten feet from corner to corner. The Ferret was put in, and it was astonishing to see the systematic way in which he set about his work. Some of the larger rats were very great cowards, and surrendered with scarcely a struggle; while some of the smaller, or three-parts-grown ones, fought most desperately. One of these drew my particular attention. The Ferret, in making his attacks, was beaten off several times, to his great discomfiture; for the rat bit him most severely. At last the Ferret bustled the fight, and succeeded in getting the rat upon its back, with one of his feet upon the lower part of its belly. In this position they remained for some minutes, with their heads close to each other and their mouths wide open. The Ferret was rather exhausted with his former conflicts, and every move he made the rat bit him. At last he lost his temper, and making one desperate effort, he succeeded in getting the rat within his deadly grasp. He threw himself upon his side, and drawing the rat close to him, he fixed his teeth in its neck.

"While thus engaged, a rat was running carelessly about. All at once, when near the Ferret, it threw up its head as if a new idea had struck it: it retreated until it met with another and it was astonishing to see the instantaneous effect produced in the second. Off they ran together to the corner where the Ferret lay. The fact was, they scented the blood of either the rat or the Ferret, which in both was running in profusion. Without any further ceremony they seized the Ferret fast by the crown of the head, and drew themselves up for a comfortable suck of warm blood. The Ferret, feeling the smart, thought it was his old opponent that was struggling in his grasp, and bit his lifeless victim most furiously. Presently he let go the dead rat and seemed astounded at the audacity of the others. He began to struggle, and they seemed quite offended at being disturbed at their repast. He very soon, however, succeeded in catching hold of one of them, and the other ran away; but only for a few seconds. The Ferret demolished the whole fifty considerably under the hour."

Two kinds of Ferrets are employed for the purpose of hunting game; the one, a creamy-white creature, with bright pink eyes, and the other a much darker and fiercer-looking animal,

which is the mixed offspring of the polecat and the Ferret. This is the animal which is called the Polecat-ferret in the above-mentioned anecdote.

The same author mentions several curious instances of single combat between rats and Ferrets, in which the latter animals were successfully resisted. On one occasion, when he was walking in the fields, accompanied by the tame Ferret which has already been described, a sharp conflict took place between the Ferret and a female water-rat which was defending her young. Not seeing the first attack, the owner of the Ferret thought that his favorite had wounded its nose against a spike, for it was bleeding profusely, and seemed to be in great distress. Presently, however, the cause of its wounds became apparent, in the person of a large rat, which darted fiercely at him from the cover of a bunch of grass, and with the force of her spring fairly knocked him off his legs.

MINK.—*Vison lutreola.*

When the grass-tuft was removed, a litter of young rats was seen, over whom the mother was keeping such undaunted watch. She did not attempt to escape, but ever and anon, as the Ferret drew within a certain distance, she flew at him, and knocked him over, inflicting a fresh bite on every attack, so that the assailant was being worsted. At last, being encumbered with the weight of two little rats, which clung too firmly to their parent, she made a false leap, and was seized in the fatal embrace of the Ferret, who would soon have put an end to the valiant defender of her young had not the owner of the Ferret come to the rescue and disengaged the cruel teeth from their hold. But so furious was the mother rat, that when she was released from her foe she again flew at it, and inflicted several severe bites. Its owner then held the Ferret by its tail, and was carrying it away, when the rat, after making several ineffectual springs, actually leaped upon him, ran up his legs and body, and along his outstretched arm, so as to get at her hated enemy, on whom she inflicted another bite and fell to the ground. A second time she attempted this manœuvre, and when frustrated in her wishes set up her back and bade defiance to man and beast.

To the honor of the human spectator, he took a great interest in the valiant little animal, and regularly supplied her with food until her offspring were able to shift for themselves.

On account of its water-loving propensities, the Mink is called by various names that bear relation to water. By some persons it is called the Smaller Otter, or sometimes the Musk Otter, while it is known to others under the title of the Water-Polecat. It also goes by the name of the Nurek Vison.

The Mink is spread over a very large extent of country, being found in the most northern parts of Europe, and also in North America. Its fur is usually brown, with some white about the jaws, but seems to be subject to considerable variations of tinting. Some specimens are of a much paler brown than others; in some individuals the fur is nearly black about the head,

while the white patch that is found on the chin is extremely variable in dimensions. The size, too, is rather variable.

It frequents the banks of ponds, rivers, and marshes, seeming to prefer the stillest waters in the autumn, and the rapidly flowing currents in spring. As may be supposed from the nature of its haunts, its food consists almost wholly of fish, frogs, crawfish, aquatic insects, and other creatures that are to be found either in the waters or in their close vicinity. The general shape of its body is not quite the same as that of the marten or ferret; and assumes something of the otter aspect. The teeth, however, are nearer those of the polecat than of the otter; and its tail, although not so fully charged with hair as the corresponding member in the polecat, is devoid of that muscular power and tapering form which is so strongly characteristic of the otter. The feet are well adapted for swimming, on account of a slight webbing between the toes.

The fur of this animal is excellent in quality, and is by many persons valued very highly. By the furriers it passes under the name of "Mœnk," and it is known by two other names, "Tutucuri" and "Nœrs." As it bears a great resemblance to the fur of the sable, it is often fraudulently substituted for that article—a deception which is the more to be regretted, as the fur of the Mink is a really excellent one, handsome in its appearance, and extremely warm in character. By some authors, the identity of the Mink with the water-polecat has been doubted, but, as it appears, without sufficient reason.

THERE is hardly any animal which, for its size, is so much to be dreaded by the creatures on which it preys as the common WEASEL. Although its diminutive proportions render a single Weasel an insignificant opponent to man or dog, yet it can wage a sharp battle even with such powerful foes, and refuses to yield except at the last necessity.

The proportions of the Weasel are extremely small, the male being rather larger than the opposite sex. In total length, a full-grown male does not much exceed ten inches, of which the tail occupies more than a fifth, while the female is rather more than an inch shorter than her mate. The color of its fur is a bright reddish-brown on the upper parts of the body, and the under portions are of a pure white, the line of demarcation being tolerably well defined, but not very sharply cut. This contrast of red and white renders it an exceedingly pretty little animal. The tail is of a uniform tint with the body, and is not furnished with the tuft of jetty hairs that forms so conspicuous a decoration of the stoat.

The audacity of this little creature is really remarkable. It seems to hold every being except itself in the most sovereign contempt, and, to all appearance, is as ready to match itself against a man as against a mouse. Indeed, it carries its arrogant little pretensions so far, that, if elephants were inhabitants of this country, the Weasel would be quite willing to dispute the path with them. I remember being entirely baffled by the impertinence of one of these animals, although I was provided with a gun. While I was walking along a path that skirted a corn-field, a stir took place among some dried leaves by the hedge-side, and out ran something small and red along the bottom of the hedge. I instantly fired, but without success, at the moving object, which turned out to be a Weasel. The little creature, instead of running away, or appearing alarmed at the report and the shot, which tore up the ground around it, coolly ran into the middle of the path, and sitting up on its hind legs, with its paws crossed over its nose, leisurely contemplated me for a moment or two, and then quietly retired into the hedge.

It is a terrible foe to many of the smaller rodents, such as rats and mice, and performs a really good service to the farmer by destroying many of these farmyard pests. It follows them wherever they may be, and mercilessly destroys them, whether they have taken up their summer abode in the hedgerows and river-banks, or whether they have retired to winter quarters among the barns and ricks. Many farmers are in the habit of destroying the Weasels, which they look upon as "vermin," but it is now generally thought that although the Weasel must plead guilty to the crime of destroying a chicken or duckling now and then, it may yet plead its great services in the destruction of mice as a cause of acquittal. The Weasel is specially dreaded by rats and mice, because there is no hole through which either of these animals can

pass which will not quite as readily suffer the passage of the Weasel; and as the Weasel is most determined and pertinacious in pursuit, it seldom happens that rats or mice escape when their little foe has set itself fairly on their track.

Not only does the Weasel pursue its prey through the ramifications of the burrows, but it possesses in a very large degree the faculty of hunting by scent, and is capable of following its prey through all its windings, even though it should not come within sight until the termination of the chase. It will even cross water in the chase of its prey. When it has at last reached its victim, it leaps upon the devoted creature, and endeavors to fix its teeth in the back of the neck, where it retains its deadly hold in spite of every struggle on the part of the wounded animal. If the attack be rightly made, and the animal be a small one, it can drive its teeth into the brain, and cause instantaneous insensibility. The gamekeeper has some reason for his dislike to the Weasel, as it is very fond of eggs and young birds of all kinds, and is too prone to rob the nests of eggs or young. It is said that an egg which has been broken by a Weasel can always be recognized by the peculiar mode which the little creature employs for the purpose. Instead of breaking the egg to pieces, or biting a large hole in the shell, the Weasel contents itself with making quite a small aperture at one end, through which it abstracts the liquid contents.

WEASEL.—*Mustela vulgaris.*

So determined a poacher is the Weasel that it has been seen to capture even full-grown birds. A Weasel has been seen to leap from the ground into the midst of a covey of partridges, just as they were rising on the wing, and to bring one of them to the earth. When the spectator of this curious occurrence reached the spot, he found the Weasel in the act of devouring the bird, which it had already killed. This adventure took place about the end of the month of October. The birds were more than two feet from the ground when the attack was made upon them.

Another Weasel was seen to capture and kill a rook in a somewhat similar manner. The rooks had discovered the Weasel in a field, and after their custom on such occasions, had gathered round it, and commenced mobbing it. Suddenly, just as one of the rooks made a lower stoop than usual, the Weasel leaped at its tormentor and dashed it to the ground. The dissonant cries of the rooks as they scolded the Weasel attracted the attention of a horseman who was passing by, who arrived at the spot just as the bird had been killed. It lay on the ground dead, from a wound in its neck; its murderer having taken shelter in a neighboring hedge. As soon, however, as the horseman withdrew, the Weasel emerged from its hiding-place, and dragged the dead rook under the shelter of the bushes.

Although the Weasel proved the victor in this instance, it does not always meet with equal success, especially when it matches its mental powers against those of a superior kind. The predilection of this animal for eggs has already been mentioned, and the Weasel will take great pains in order to secure the coveted luxury. A gentleman, who had discovered a furtive nest made by one of his hens in a hedgerow, was witness to a curious scene. Just as the hen had laid an egg, she issued from her nest, cackling triumphantly, as is the manner of hens upon such occasions. A Weasel, which had been observed at a great distance stretching its

neck as if watching for its prey, darted towards the spot, but just before it reached the nest it was anticipated by a crow, which seized the egg and bore it off in triumph. Desirous of investigating the matter further, the proprietor of the plundered fowl would not remove her nest, but took up his station on the succeeding day, in order to see whether crow or Weasel would return to the attack. No sooner had he arrived at his post than he saw the crow already perched on a neighboring tree, and in a very short time the Weasel made its appearance also. By degrees the two animals drew nearer to the hen's nest, and as soon as her voice gave the signal, they simultaneously started for the spoil. As before, the wings were more than a match for the legs, and the crow again bore off the prize.

The Weasel has been seen to catch and to kill a bunting by creeping quietly towards a thistle on which the bird was perching, and then to leap suddenly upon it before it could use its wings. When it seizes an animal that is likely to make its escape, the Weasel flings its body over that of its victim, as if to prevent it from struggling. In single combat with a large and powerful rat, the Weasel has but little hope of success unless it should be able to attack from behind, as the long, chisel-edged teeth of the rat are terrible weapons against so small an animal as the Weasel. The modes of attack employed by the two animals are of a different character, the rat making a succession of single bites, while the Weasel is accustomed to fasten its teeth in the head or neck of its opponent, and there to retain its hold until it has drained the blood of its victim. The fore-legs of the Weasel are of very great service in such a contest, for when it has fixed its teeth, it embraces its opponent firmly in its fore-limbs, and rolling over on its side, holds its antagonist in its unyielding grasp, which is never relaxed as long as a spark of life is left.

In these mortal contests, the Weasel has a considerable advantage in its long and powerful neck, which can be twisted with a most snake-like ease, and which gives the possessor a very serpentine aspect on occasions.

Like the polecat, and others of the same group of animals, the Weasel is most destructive in its nature, killing many more animals than it can devour, simply for the mere pleasure of killing. It is curious to notice how the savage mind, whether it belong to man or beast, actually revels in destruction, is maddened to absolute frenzy by the sight of blood, and is urged by a kind of fiery delirium to kill and to pour out the vital fluid. Soldiers in the heat of action have often declared that everything which they saw was charged with a blood-red hue, but that the details of the conflict had entirely passed from their minds. A single Weasel, urged by some such destructive spirit, has been known to make its way into a cage full of freshly-caught song-birds, and to destroy every single bird. The little assassin was discovered lying quite at its ease in a corner of the cage, surrounded with the dead bodies of its victims. The angry bird-catchers sought at once for a stone wherewith to avenge themselves of the destroyer, but before they could procure a weapon, the Weasel glided through one of the little holes through which the birds obtain access to the water, and was speedily concealed in a hedge beyond hope of discovery.

Even such large animals as hares have been said to fall victims to the Weasel. But it must be borne in mind that in many parts the stoat goes by the title of Weasel, and under that name obtains the credit for many of the achievements which ought to have been attributed to the rightful perpetrator. It is said to kill and eat moles, and this idea is strengthened by the fact that Weasels have more than once been captured in mole-traps. These unfortunate animals were evidently snared in the act of traversing the same passages as the mole, but whether their object was the slaughter of the original excavators is not clearly ascertained.

The exceeding audacity of the Weasel has been already mentioned, and for proofs of this disposition the following anecdotes are cited.

Two gentlemen were riding in the open country, one of whom dismounted in order to inspect some cattle in a field, leaving his horse in the charge of his companion. Presently, a Weasel came out of the neighboring hedge, and fastened on the fetlock of one of the horses, grasping so firmly that it would not loosen its hold until it had been crushed under foot by the owner of the horse. Some little while ago, a party of Weasels were seized with an idea that they must prevent any one from passing near their habitation. A boy, who was obliged

in his way homewards to pass very close to the prohibited spot, was actually chased away several times by the "futterits," as he called them, and dared not oppose the fierce little creatures. A carrier happening to come in the direction, accompanied the boy to the spot, and was immediately attacked by the Weasels. A few sharp blows from his whip laid the principal assailants dead at his feet, and the others, seeing the fate of their comrades, left the field to their conquerors.

There are many similar anecdotes extant, which are easily believed by those who have seen the consummate assurance with which a party of Weasels will run from their habitations and inspect a passing traveller.

At all times the Weasels are sufficiently precarious in their temper, and extremely apt to take offence; but when a mother Weasel imagines that her little ones are likely to be endangered by man or beast, she becomes a really dangerous opponent. Even so small an animal is capable of inflicting a very severe bite, and when she is urged by the desperate courage which is implanted in the breast of every mother, is not unlikely to succeed in her object before she is repelled. Moreover, she does not trust to her sole efforts, but summons to her assistance the inhabitants of the same little community, and with their aid will drive away an unarmed man from the neighborhood of their habitations. Several such instances are on record, in one of which a powerful man was so fatigued with his exertions in keeping off his assailants, that he would soon have sunk under their united attacks had he not been rescued by the timely assistance of a horseman who happened to pass near the spot, and who came to the rescue with his whip. Urged by their bloodthirsty instinct, the Weasels all directed their efforts to the throat, and made their attacks in such rapid succession that their opponent was solely occupied in tearing away the active little creatures and flinging them on the ground, without being permitted the necessary leisure for killing or maiming his pertinacious antagonists.

It seems that the Weasels will unite their forces for the purposes of sport as well as for those of attack, and will hunt down their game in regular form. Not long ago, as a gentleman was walking in the fields, he saw a number of small objects moving in a line, which he at first took for partridges, but which turned out to be Weasels, which were evidently following the track of some animal by its scent. Having his gun with him, he fired, and found that he had shot no less than six Weasels which had brought themselves into a line with the gun.

A most curious example of mingled courage and presence of mind displayed by this animal is related by Mr. Bell in his History of British Quadrupeds.

As a gentleman was riding over his grounds, he saw a kite pounce upon some object and carry it from the ground. In a short time the kite showed symptoms of uneasiness, trying to free itself from some annoying object by means of its talons, and flapping about in a very bewildered manner. In a few minutes the kite fell dead to the earth, and when the spectator of the aerial combat approached, a Weasel ran away from the dead body of the bird, itself being apparently uninjured. On examination of the kite's body, it was found that the Weasel, which had been marked out for the kite's repast, had in its turn become the assailant, and had attacked the unprotected parts which lie beneath the wings. A considerable wound had been made in that spot, and the large blood-vessels torn through.

The same writer relates a curious anecdote of the conduct of a Weasel towards a snake which was placed in the same box. The snake did not attempt to attack the Weasel, nor the Weasel the snake, both animals appearing equally unwilling to become the assailant. After a while, the Weasel bit the snake once or twice near the nose, but not with any degree of violence, and as the two creatures appeared to be indifferent to each other, the snake was removed. That this peaceable demeanor on the part of the Weasel was not owing to any sluggishness on its own part, was made sufficiently evident by the fact that when a mouse was introduced into the same box, the Weasel immediately issued from its corner, and with a single bite laid the mouse dead. The experiment was made for the purpose of ascertaining whether the Weasel would kill and eat a snake, which had been asserted to be the case.

The fondness of the Weasel for frogs has already been recorded. A curious instance of the nonchalant manner in which the Weasel will sometimes gratify this predilection, occurred

at a church near Oxford where I for some time officiated. One morning, during service, a Weasel was seen to creep into the chancel through a small door which led into the churchyard, and to walk gently into the middle of the floor. It sat up and reconnoitred the locality for a few moments, and then retired. But in a very short time it returned with a frog in its mouth, carried its prey into the middle of the floor, and there ate it, undisturbed by the presence of the congregation or the sound of many voices.

That the Weasel, when its numbers are not very great, is a valuable ally to the farmer and the poultry-fancier, is now generally acknowledged. But there are instances where it has played the part which is generally attributed to a powerful ally, and has, after successfully extirpating the foes against whom it was summoned, taken possession of the country which it came to save. There was a certain fish-pond which was suddenly invaded by a large body of rats, which bored the banks in every direction, caught and ate the fish, and were so insolent in the confidence of their numbers and strength that they would sit openly at the mouth of their burrows, and boldly challenge any one who approached too near them. The nuisance increased with great rapidity, when it was unexpectedly checked by the advent of a party of Weasels, which in their turn took possession of the burrows, and in a short time had driven away or killed every one of the rats. The fish were thus saved, and their owner felt a very warm gratitude towards the Weasels for their timely interference on his behalf. However, the Weasels, having eaten all the rats, began to extend their operations farther afield, and invaded the neighboring premises in search of more game. Chickens, eggs, and young rabbits were continually carried off, and the owner of the pond was soon as anxious to rid himself of the Weasels as he had been desirous of destroying the rats. The Weasels, however, were not so easily driven from their usurped burrows, and continued to hold their ground.

The Weasel affords another example of the hasty manner in which so many animals are calumniated. It is said by Buffon to be wholly untamable, sullen, and savage, and to be insensible to every kindness that could be lavished upon it. Yet we find that the true disposition of the Weasel is of a very different character, and that there is hardly any of the British animals which is more keenly susceptible of kindness, or which will more thoroughly repay the kind treatment of a loving hand. A lady who had taken a fancy to a Weasel, and had succeeded in gaining its affections, wrote a most charming account of the habits of the little creature which she had taken under her protection. She writes as follows: —

"If I pour some milk into my hand, it will drink a good deal, but if I do not pay it this compliment it will scarcely take a drop. When satisfied, it generally goes to sleep. My chamber is the place of its residence; and I have found a method of dispelling its strong smell by perfumes. By day, it sleeps in a quilt, into which it gets by an unsewn place which it has discovered on the edge; during the night, it is kept in a wired box or cage, which it always enters with reluctance, and leaves with pleasure. If it be set at liberty before my time of rising, after a thousand little playful tricks, it gets into my bed, and goes to sleep in my hand or on my bosom. If I am up first, it spends a full half-hour in caressing me; playing with my fingers like a little dog, jumping on my head and on my neck, and running round on my arms and body with a lightness and elegance which I have never found in any other animal. If I present my hands at the distance of three feet, it jumps into them without ever missing. It exhibits great address and cunning to compass its ends, and seems to disobey certain prohibitions merely through caprice.

"During all its actions it seems solicitous to divert and to be noticed; looking at every jump and at every turn to see whether it be observed or not. If no notice be taken of its gambols, it ceases them immediately, and betakes itself to sleep, and even when awakened from the soundest sleep it instantly resumes its gaiety, and frolics about in as sprightly a manner as before. It never shows any ill-humor, unless when confined, or teased too much; in which case it expresses its displeasure by a sort of murmur, very different from that which it utters when pleased.

"In the midst of twenty people this little animal distinguishes my voice, seeks me out, and springs over everybody to come at me. His play with me is the most lively and caressing

imaginable. With his two little paws he pats me on the chin, with an air and manner expressive of delight. This, and a thousand other preferences, show that his attachment to me is real. When he sees me dressed for going out, he will not leave me, and it is not without some trouble that I can disengage myself from him; he then hides himself behind a cabinet near the door, and jumps upon me as I pass, with so much celerity that I often can scarcely perceive him.

"He seems to resemble a squirrel in vivacity, agility, voice, and his manner of murmuring. During the summer he squeaks and runs about the house all the night long; but since the commencement of the cold weather I have not observed this. Sometimes, when the sun shines while he is playing on the bed, he turns and tumbles about and murmurs for a while.

"From his delight in drinking milk out of my hand, into which I pour a very little at a time, and his custom of sipping the little drops and edges of the fluid, it seems probable that he drinks dew in the same manner. He seldom drinks water, and then only for want of milk, and with great caution, seeming only to refresh his tongue once or twice, and even to be afraid of that fluid. During the hot weather it rained a good deal; I presented to him some rain-water in a dish, and endeavored to make him go into it, but could not succeed. I then wetted a piece of linen cloth in it, and put it near him, and he rolled upon it with extreme delight.

"One singularity in this charming animal is his curiosity. It is impossible to open a drawer or a box, or even to look at a paper, but he will examine it also. If he get into any place where I am afraid of permitting him to stay, I take a paper or a book, and look attentively at it, on which he immediately runs upon my hand, and surveys with an inquisitive air whatever I happen to hold. I must further observe, that he plays with a young cat and dog, both of considerable size, getting about their necks, backs, and paws, without their doing him the slightest injury."

This amusing little creature was fed chiefly with small pieces of fresh meat, which it preferred to receive from the hand of its mistress.

This is not a solitary instance of a Weasel being effectually tamed, for M. Giely has recorded his success in taming a Weasel, which he had trained so perfectly that it would follow him wherever he went. Indeed, it seems but reasonable to suppose, that as the ferret has been rendered subservient to man, and has been domesticated to a considerable extent, the Weasel might be equally susceptible of the same influence, and be employed for the same purposes.

Indeed, it is very unlikely that a totally untamable animal should exist, for, as far as has yet been known, the very creatures which gave the most unpromising indications of ferocity or obstinacy have been the most remarkable for their docility under the treatment of certain individuals. We should not be overpassing the bounds of credibility were we to assert, that no creature in which is the breath of life is capable of withstanding the potent influence which is given to mankind for that very purpose, always provided that it be used with gentleness, firmness, and much patient love.

The number of young which the Weasel generally produces at each birth is four or five, and there are said to be usually two or even three litters in each year. The nest is generally placed in the warm cover which is afforded by a hollow tree, in the crevices that exist in rocky ground, or in burrows which are made in dry sandy soil. The nest is composed of dry moss and leaves.

The fur of the Weasel is sometimes powerfully influenced by the effects of the severe cold, and has been known to become nearly white during a sharp and protracted frost. It is worthy of notice that, in such cases, the tip of the tail does not partake of the general change of tint, but retains its bright red hue, precisely as the tail of the ermine retains its jetty blackness while the remainder of the fur is either white or cream-colored. Mr. Bell remarks that he has seen a Weasel which had retained its wintry whiteness in two spots on each side of the nose, although the remainder of the fur had returned to its usual reddish hue during the summer months. This specimen was captured in the extreme north of Scotland. While clad in the white garments of winter, in which state it is frequently found in Siberia, it is the animal which was called Mustela nivalis, or snowy Weasel, by Linnæus. It is rather variable in tint, independently of the influence of climate; some individuals being less brightly tinged

with red than others, while occasional specimens are found in which the fur is of an exceedingly dark brown.

To persons who have had but little experience in the habits of wild animals, it is generally a matter of some surprise that the celebrated Ermine fur, which is in such general favor, should be produced by one of those very animals which we are popularly accustomed to rank among "vermin," and to exterminate in every possible way. Yet so it is. The highly-prized ERMINE and the much-detested STOAT are, in fact, one and the same animal, the difference in the color of their coats being solely caused by the larger or smaller proportion of heat to which they have been subjected.

STOAT OR ERMINE.—*Mustela erminea.*

In the summer time, the fur of the Stoat —by which name the animal will be designated, whether it be wearing its winter or summer dress,—is not unlike that of the weasel, although the dark parts of the fur are not so ruddy, nor the light portions of so pure a white, as in that animal. The toes and the edges of the ears are also white.

The change of color which takes place during the colder months of the year is now ascertained, with tolerable accuracy, to be caused by an actual whitening of the fur, and not by the gradual substitution of white for dark hairs, as was for some time supposed to be the case.

The hairs are not entirely white, even in their most completely blanched state, but partake of a very delicate cream-yellow, especially upon the under portions, while the slightly bushy tip of the tail remains in its original black tinting, and presents a singular contrast to the remainder of the fur. In these comparatively temperate latitudes, the Stoat is never sufficiently blanched to render its fur of any commercial value, and the hair appears to be longer, thicker, and whiter in proportion to the degree of latitude in which the animal has been taken. As may be supposed, from the extreme delicacy of the skin in its wintry whiteness, the capture of the Stoat for the purpose of obtaining its fur is a matter of no small difficulty. The traps which are used for the purpose of destroying the Stoat are formed so as to kill the animal by a sudden blow, without wounding the skin; and many of the beautiful little creatures are taken in ordinary snares.

The object of the whitened fur of the Stoat is popularly supposed to be for the purpose of enabling the animal to elude its enemies by its similarity to the snow-covered ground on which it walks, or to permit it to creep unseen upon its prey. It seems, however, that many animals partake of the same tinting, some of which, such as the polar bear, are so powerful, that they need no such defence against enemies, and so active in the pursuit of the animals on which they feed, that their success in obtaining food seems to depend but little upon color. The arctic fox, which has already been mentioned, and the lemming, which will be recorded in a future page, are examples of this curious mutation of color.

Putting aside for the present the mode in which the fur changes its color, the real object of the change appears to be for the purpose of defending the wearer against the intense colds which reign in those northern regions, and which, by a beautiful provision, are obliged to work the very change of color which is the best defence against their powers. It is well known that

black substances radiate heat more effectually than objects which are bright and polished. This fact is popularly shown in the bright teapots with which we are so familiar, and which are known, by practical experience, to retain the heat for a much longer period than if their surface had been roughened or blackened.

The reader will not fail to remark a certain coincidence between the snowy hairs that deck the frosty brows of old age with a reverend crown and the white fur that adds such beauty to the frost-beset Stoat. It may be that the energies of the animal are forced, by the necessity which exists for resisting the extremely low temperature of those icy regions, to concentrate themselves upon the vital organs, and are unable to spare a sufficiency of blood to form the coloring matter that tinges the hair. There is evidently an analogy between the chilly feeling that always accompanies old age and the frosty climate that causes the Stoat's fur to whiten.

It is well known that examples of albinos occur in almost every kind of quadruped and bird, and it seems probable that the deprivation of color is in very many cases owing to the weak constitution of the individual. One of these albinos was a bird, which was caught and tamed, and although it was of a cream color when it was captured, yet assumed the usual dark plumage of the species at the first moulting season that occurred after its capture. As the bird also appeared to be much more healthy and lively than when it was clad in white feathers, it seems likely that the albino state may have been caused by weakness of constitution.

It is clear that, whatever may be the immediate cause of the whitening of the hair, the change of tint is caused by the loss of the coloring matter which tinges the hair, and that there must be some connection between the frost-whitened Stoat, the age-whitened human hair, and the abnormal whiteness of various albinos. I would also mention, in connection with this subject, the curious instances where the hair of human beings has been suddenly blanched by powerful emotion. This fact has been disputed by several physiologists, but is now acknowledged to be true. Besides the various well-attested examples which are on record, I am enabled to give my own personal testimony to the truth of this singular phenomenon, as I have frequently seen a person whose hair was changed in a single night from dark to gray by sudden grief and terror, and the whole system fatally deranged at the same time.

Where the lowest temperature is considerably above that of the ordinary wintry degrees, the Stoat is very uncertain in its change of fur, and seems to yield to or to resist the effects of the cold weather according to the individuality of the particular animal.

In the autumn, when the Stoat is beginning to assume its wintry dress, and in the spring, when it is beginning to lose the snowy mantle of the wintry months, the fur is generally found to be marked with irregular patches of dark and white spots, the sides of the face appearing to be especially variable in this respect. Sometimes the animal resists the coldest winters, and retains its dark fur throughout the severest weather, and it sometimes happens that a Stoat will change its fur even though the winter should be particularly mild. Mr. Thompson records, in his work on the Natural History of Ireland, that he saw a Stoat which was captured on the 27th of January, 1846, which was wholly white, with the exception of a brown patch on each side of its face. Yet the winter had been remarkably mild, without any frost or snow, although there had been abundance of rain and storms. Two white Stoats were killed in Ayrshire, in 1839, which were almost entirely white, though the frosts had been extremely mild, and the snow had altogether been absent.

As, in the former of these examples, the weather is said to have been extremely wet, it may be presumed that the moisture of the atmosphere and ground may have some connection with the whitening of the hair. On account of the better radiating powers of dark substances, the dew or general moisture is always found to be deposited in greater quantity on dark or dull, than on white or polished substances. Any one may easily prove this fact, by watching the effects of the dew on a white and a red rose growing in close proximity to each other.

The Stoat is considerably larger than the weasel, measuring rather more than fourteen inches in total length, of which the tail occupies rather more than four inches. There is, however, considerable difference in the size of various individuals.

It is a most determined hunter, pursuing its game with such pertinacious skill that it very seldom permits its intended prey to escape.

Although tolerably swift of foot, it is entirely unable to cope with the great speed of the hare, an animal which frequently falls a victim to the Stoat. Yet it is enabled, by its great delicacy of scent and the singular endurance of its frame, to run down any hare on whose track it may have set itself, in spite of the long legs and wonderful speed of its prey. When pursued by a Stoat, the hare does not seem to put forward its strength as it does when it is followed by dogs, but as soon as it discovers the nature of its pursuer, seems to lose all energy, and hops lazily along as if its faculties were benumbed by some powerful agency. This strange lassitude, in whatever manner it may be produced, is of great service to the Stoat, in enabling it to secure an animal which might in a very few minutes place itself beyond the reach of danger, by running in a straight line.

In this curious phenomenon, there are one or two points worthy of notice.

Although the Stoat is physically less powerful than the hare, it yet is endowed with, and is conscious of, a moral superiority, which will at length attain its aim. The hare, on the other hand, is sensible of its weakness, and its instincts of conservation are much weaker than the destructive instinct of its pursuer. It must be conscious of its inferiority, or it would not run, but boldly face its enemy, for the hare is a fierce and determined fighter when it is matched against animals that are possessed of twenty times the muscular powers of the Stoat. But as soon as it has caught a glimpse of the fiery eyes of its persecutor, its faculties fail, and its senses become oppressed with that strange lethargy which is felt by many creatures when they meet the fixed gaze of the serpent's eye. A gentleman who once met with a dangerous adventure with a cobra, told me that the creature moved its head gently from side to side in front of his face, and that a strange and soothing influence began to creep over his senses, depriving him of the power of motion, but at the same time removing all sense of fear. So the hare seems to be influenced by a similar feeling, and to be enticed as it were to its fate, the senses of fear and pain benumbed, and the mere animal faculties surviving, to be destroyed by the single bite.

I have no doubt but that this phenomenon is nearly connected with the curious benumbing of the nerves, and the deprivation of fear which is recorded by Livingstone in his well-known account of his adventure with a lion, which is mentioned in this work. The preservative faculties of the hare are excited by the loud noisy dogs that make so violent an attack upon the hare, and which consequently makes use of all her muscular and intellectual powers to escape from them. But the silent, soft-footed, gliding Stoat steals quietly on its victim without alarming it by violent demonstrations, soothes it to its death and kills it daintily.

Be it noticed that there are human types of the Stoat, or rather that the visible animal is but an outward emblem of the inward nature.

If in the course of the chase, the hunted animal should cross a stream, the Stoat will do the same, although, when it is engaged in the pursuit of water-voles, it seldom ventures to follow them into an element where they are more at their ease than their pursuer. Still, although it may not choose to match itself against so accomplished a swimmer and diver as the water-vole, it is no mean proficient in the natatory art.

Mr. Thompson relates a curious instance of the prowess which is displayed by the Stoat in crossing a tolerably wide expanse of water. "A respectable farmer, when crossing in his boat over an arm of the sea, about one mile in breadth, observed a ripple proceeding from some animal in the water, and on rowing up, found that it was a Stoat which he had no doubt was swimming in a direct line from the shore, and it had reached the distance by a quarter of a mile when taken. The poor animal was cruelly killed, although its gallant swimming might have pleaded in favor of its life."

As to the food of the Stoat, the animal seems to be very easily contented in this respect, killing and eating almost any description of wild quadrupeds, birds, and reptiles. Of rabbits it is very fond, and kills great numbers of them, especially when they are young.

A curious scene between a Stoat and rabbit was once witnessed in a forest. A piercing cry was heard among some underwood, from which issued a poor rabbit, bearing with it a Stoat, clinging to its neck. The Stoat, on finding that its actions were observed, quitted its prey and ran up a tree. One of the keepers, who witnessed the scene, had not his gun with

him, and sent his companion to fetch it. Just as he arrived, bearing the weapon, the Stoat descended the tree, and running to the rabbit, which had lain as if paralyzed on the ground, tried to drag it away, but was stopped by the contents of the gun, which involved the Stoat and its victim in a common fate.

Birds' nests of all kinds are plundered by this incorrigible poacher, for its quick eye and keen nose enable it to discover a nest, be it never so carefully hidden; its agile limbs and sharp claws give it the power of climbing any tree-trunk, and of clinging to any branch which will bear the weight of a nest and eggs; while its lithe and serpent-like body enables it to insinuate itself into any crevice that is sufficiently large to afford ingress and egress to the parent birds. The pheasant and partridge are said to be sad sufferers from the Stoat, which is mercilessly slain by the keeper with the aid of traps or gun, the former being the preferable mode of destroying "vermin." The traps in which Stoats are to be caught are most ingeniously placed in certain tempting "runs" to which the Stoat, being a dark-loving animal, is sure to be attracted. For several days the baits are laid on the traps, which are left unset, so that the Stoats find out the locality, and think that they have fallen upon a most hospitable ground. When they have accustomed themselves to eat the baits with impunity, the keeper sets the traps, and immolates the hapless visitants.

When the female Stoat is providing for the wants of a young family, she forages far and wide for her offspring, and lays up the produce of her chase in certain cunningly contrived larders. In a wood belonging to Lord Bagot, a Stoat nursery was discovered, having within it no less than six inhabitants, a mother and her five young. Their larder was supplied with five hares and four rabbits, neither of which had been in the least mangled, with the exception of the little wound that had caused their death. In another nest of Stoats were found a number of small animals, such as field-mice, birds, and frogs, all packed away in a very methodical manner. In two nests which were found in Tollymore Park, the Stoats had laid up an abundance of provision. In one of them there were six or seven mice, besides other small animals, all laid with their heads in the same direction. In the other nest was a more extensive assortment of dead animals. A dozen mice, a young rabbit, and a young hare were laid in the store-house, together with the feathers and tail of a woodcock, showing that even that wary bird had fallen a victim to the Stoat.

Although the Stoat is so formidable an enemy to rats and mice, and destroys annually such numbers of these destructive animals, it sometimes happens that the predaceous animal finds its intended prey to be more than its match, and is forced ignominiously to yield the contest. One of these animals was seen in chase of a rat, which it was following by scent, and at a great pace. After a while, the Stoat overtook the rat, and would have sprung upon her, had not its purpose been anticipated by a sudden attack from the rat, which turned to bay, and fiercely flung herself with open jaws on her pursuer. The Stoat was so startled at so unexpected a proceeding, that it fairly turned tail and ran away. The rat now took up the pursuit, and chased the Stoat with such furious energy that she drove her enemy far from the place. It is probable that the rat had a young family at hand, and was urged to this curious display of courage by the force of her maternal feelings.

On account of its agile limbs, sharp teeth, and ferocious disposition, even a single Stoat would be a dangerous opponent for an unarmed man. But if several Stoats should unite to attack a single man, he would find himself in bad case, armed or not. Such a circumstance has been lately communicated to me, my informant having heard it from the lips of the principal actor in the scene.

A gentleman was walking along a road, when he saw two Stoats sitting in the path. He idly picked up a stone, and flung it at the animals, one of which was struck, and was knocked over by the force of the blow. The other Stoat immediately uttered a loud and peculiar cry, which was answered by a number of its companions, who issued from a neighboring hedge, and sprang upon their assailant, running up his body with surprising rapidity, and striving to reach his neck. As soon as he saw the Stoats coming to the attack, he picked up a handful of stones, thinking that he should be able to repel his little enemies, but they came boldly on, in spite of the stones and of his stick. Most providentially a sharp wind happened to be blowing

on that day, and he had wound a thick woollen comforter round his neck, so that he was partially protected.

Finding that he had no chance of beating off the pertinacious animals, he flung his stick down, fixed his hat firmly over his temples, and pressing his hands to his neck, so as to guard that perilous spot as much as possible from the sharp teeth of the Stoats, set off homewards as fast as he could run. By degrees, several of the animals dropped off, but others clung so determinately to their opponent, that when he arrived at his stables, no less than five Stoats were killed by his servants as they hung on his person. His hands, face, and part of his neck were covered with wounds; but owing to the presence of mind with which he had defended his neck, the large blood-vessels had escaped without injury. The distance from the spot where he had been attacked to his own house was nearly four miles.

He always declared that when he struck the Stoat with the stone, its companion called out "Murder!"

The Stoat is, like the weasel, possessed of a powerful and exceedingly unpleasant odor; yet even this disagreeable accompaniment does not always suffice to preserve it from being killed and eaten by predaceous animals more powerful than itself. Even so fastidious an animal as the domestic cat has been known to capture a Stoat, to eat part of it herself, and to distribute the remainder to her kittens, who partook of the powerfully scented food without manifesting any reluctance.

Although so wild an animal, it has been tamed with as great success as the weasel and the ferret, displaying the same gentle and active playfulness as has been already mentioned as belonging to the weasel when in a state of domestication. The animal was suffered to roam at will about the house, and never gave any intimation that it wished to make its escape. It was an amusingly playful little creature, delighting to leap upon the members of the family, and run up their backs. But its greatest pleasure seemed to be in attacking a couple of old stuffed magpies that stood upon a shelf. It used to jump upon them, twist its serpentine body round their necks, drag out their feathers between its teeth, and would not unfrequently, in the exuberance of its spirits, knock the bird off the shelf, when magpie and Stoat would come to the ground together.

In the family *Mustelidæ*, species are very numerous, and America has a fair share. Ninety-two species are recorded. According to Wallace, of eight sub-families, three are represented on the American Continent. Under the sub-family *Mustelinæ* are embraced the Weasels, Polecats, Sables, Martens, etc.

The American Sable, a notable member of this family, resembles closely the Pine Marten of Europe. Its fur is in great request, though subject, like all other kinds, to fluctuation or the caprice of fashion.

The Fisher, or Black Cat (*Mustela pennanti*), is the largest known species of the family. Its bushy tail and large size make it a more attractive creature than the other members of the family. It is less known than any of our mammalia. But few years since the Fisher was abundant in the northern portion of the Middle States. This animal is said by the hunters to prey upon the Canada porcupine—a feat that many another animal shuns with dread. During seasons of extreme want in the supply of animal food, the puma will attack the porcupine; and frequent examples of the uncomfortable results of this are seen in the numerous quills studding the nose of the creature, which must produce great suffering.

The range of this great Weasel is from the Great Slave Lake and Labrador, to the Pacific, and southwards, occasionally, on the mountains of Virginia.

The Least Weasel (*Putorius pusillus*) is the smallest of the North American forms. Its tail is extremely short, and has no black tip, like those of other species. Most people know what a Weasel is, but the habits of these creatures are such that they are not often seen. If the temper of our little Weasel is anything like that of the European, with which it was once confounded, it is a most formidable creature.

The Small Brown Weasel (*Putorius cicognani*) is a well marked and easily recognized

species. It is nearer the *pusillus* or Least Weasel than any other, but has a longer tail and a black tip. It is common in Massachusetts.

Richardson's Weasel (*Putorius richardsoni*) is a little larger than the preceding, and is found in the same localities. It is distinguished from the Small Brown Weasel by its longer tail. The ears are higher and narrower at the base. In summer it is of a dark chestnut brown above, whitish beneath. In winter it is white, with a black tail-tip.

The Common Weasel (*Putorius noveboracensis*), commonly called White Weasel, is described by De Kay as the New York Ermine. Pennant called it the Stoat Ermine, from its apparent affinity with the European stoat. Godman called it Ermine Weasel. Among the trappers it is called Catamingo. This Weasel does not range farther north than Massachusetts

TAYRA.—*Galictis barbara.*

and Wisconsin. Its southern range is not below Pennsylvania. This Weasel does not change color, being of a chestnut above and whitish beneath.

The Long-tailed Weasel (*P. longicauda*) is a larger species, measuring to the tail about eleven inches, the tail vertebræ being about half this length. The black of the tail is about one-fourth its length. The color of the fur above is a light olivaceous brown, with a brownish yellow beneath. In winter it is pure white throughout, the tail with a black tip.

Kane's Ermine (*Putorius kanei*) is a form brought from the Arctic regions by the commander of the Grinnel Arctic Expedition, and named by Prof. Baird for the distinguished surgeon, Dr. Kane. It is a perfect miniature of the Old World Ermine.

Other species of American Weasels are: the Yellow-cheeked, Black-footed Ferret, and Peruvian Weasel. Dr. Coues, in his "Fur-bearing Animals," assumes that the "Ermines of Europe, Asia, and America are specifically identical. None of the supposed characters which have been relied upon to separate them have any existence in nature, excepting as peculiarities of individual specimens examined. The American Ermines are of two forms, according to size alone, which in the extremes stand widely apart, but which grade insensibly into each other"

The Common Mink (*Putorius vison*) also belongs to the list, as well as the Little Black Mink (*P. nigrescens*).

The former is, perhaps, better known to our people of the Northeastern States than any other. Its fur was at one time very much in request for wear. It is one of the most beautiful of American furs.

The latter species is the one that furnishes the darker fur, which is regarded as next to the Sable in beauty and worth. It is found in Massachusetts, and westward to Kansas.

The lively little animal which is known by the name of the Tayra is aninhabitant of tropical America, where it is found in moderate numbers, though not in very great profusion.

The color of the Tayra is a uniform black, slightly tinged with brown, with the exception of a large white patch which covers the throat and upper portion of the chest. It is said to take up its residence in burrows, which it scoops for itself in the ground. In captivity it is extremely lively and amusing, performing every movement in a sharp, quick manner, and accompanying its actions with an odd little chuckle, something like that of a hen calling to her chicks. The eye of the Tayra is small, bright, and brown in color. It is sometimes known by the title of the Great Weasel, under which name it has been described by Azara, who has, unfortunately, not left any account of its habits in a wild state. Its nature, manners, and customs are, however, said to resemble those of the following animal.

The size of the Tayra is nearly equal to that of the common Marten.

The Grison, or Huron, is a native of the Brazils, and is very common about the vicinity of Paraguay.

In its natural disposition it is exceedingly fierce, and is a terrible foe to almost every animal that it chooses to attack. Even in a state of domestication the savage instinct cannot be eradicated, for even when the Grison is rendered sufficiently tame to suffer the touch of the human hand, and to return the caresses of those to whose presence it was accustomed, it has been known to break loose from its confinement, and to slaughter some unfortunate animal that happened to be within its reach.

A Grison that belonged to Mr. Bell contrived to get out of a cage in which it had been placed, and to attack a young alligator that had been brought into the same chamber. The alligators were, as the above-mentioned author quaintly remarks, "stupidly tame, and had, on a certain evening, been laid before a fire in order to enjoy the welcome heat. In the morning, when their owner entered the room, he found that the Grison had made its escape, and had attacked one of the alligators with such savage fury that it had torn a considerable hole under one of the fore-legs, just where the large nerves and blood-vessels run, and had inflicted so terrible an injury that the poor creature died from the effects of its wound. The other alligator, although unhurt, was in a strongly excited state, snapping angrily at every one who approached it.

Another Grison, that was domesticated by M. F. Cuvier, committed a similarly fatal assault on a rather valuable animal. Although it was always well supplied with food, it became so excited at the presence of a lemur, that it broke the bars of its cage, and inflicted a mortal injury on the poor animal which had so unexpectedly called forth the innate ferocity of its character.

Yet this animal was remarkable for its docility and gentle playfulness, and was always ready for a game with any one who would spend a few minutes in the mock combats in which it delighted. The play of all wild-natured animals is a mock fight, and is often rather prone to become a real battle, if their combative nature be too much excited. The Grison would, when challenged to play, turn on its back, seize the fingers of its human playfellow between its jaws, hold them to its mouth, and press them gently with its teeth. It never bit with sufficient force to cause pain, so that its ferocious onslaught on the lemur would not have been expected from an animal of so gentle a nature. It was possessed of a very retentive memory, and could recognize its friends by the touch of their fingers, without needing to see their owners.

It is a peculiarly impertinent creature in its demeanor, and has a curious habit of rearing its long neck, and bearing its head in a very snake-like fashion. When it assumes this attitude, its bright little black eyes have a curiously pert air, as they look out from under the white, wool-like, hairy covering with which the head is furnished. All its movements are brisk and cheerful, and while running about its cage it continually utters a faint, grasshopper-like chirp.

The color of the Grison is very peculiar, and is remarkable as being of lighter color on the back than on the under portions of the body. This divergence from the usual rule is very uncommon, and is only seen in one or two animals. The muzzle, the under part of the neck, the abdomen, and legs are of a dullish black color; while the entire upper surface of the body, from the space between the eyes to the tail, is covered with a pale gray fur, each hair being diversified with black and white. The tinting of this lighter fur is rather variable; in some individuals it is nearly white, while in others it has a decided tinge of yellow.

The ears of this species are very small, and the tongue is rough. The hairs which give

HONEY RATEL.—*Ratelus capensis.*

the distinctive coloring to the upper parts of the body are longer than those which cover the remaining portions of the body and the limbs. In total length it measures about two feet, the tail being rather more than six inches in length.

The odor which proceeds from the scent-glands of the Grison is peculiarly disgusting, and offends human nostrils even more than that of the stoat and polecat.

In the clumsy-looking animal which is called the Ratel, a beautiful adaptation of nature is manifested. Covered from the tip of the nose to the insertion of the claws with thick coarse, and rough fur, and provided, moreover, with a skin that lies very loosely on the body, the Ratel is marvellously adapted to the peculiar life which it leads.

Although the Ratel is in all probability indebted for its food to various sources, the diet which it best loves is composed of the combs and young of the honey-bee. So celebrated is the animal for its predilection for this sweet dainty, that it has earned for itself the title of Honey Ratel, or Honey Weasel. The reason for its extremely thick coating of fur is now evident. The animal is necessarily exposed to the attacks of the infuriated bees when it lays siege to their fastnesses, and if it were not defended by a coating which is impenetrable to their stings, it would soon fall a victim to the poisoned weapons of its myriad foes.

In every way, the Ratel is well adapted to the circumstances in which it is placed. Not being a swift animal, it cannot escape from foes by its speed; but if it can gain but a few

minutes' respite, it can sink itself into the ground by the vigorous action of its powerful paws, and thus can avoid the attacks of almost any antagonist. Should it be overtaken before it can reach its accustomed home, or dig a new one, it throws itself on its back, and uses its teeth and claws with such force that it will beat off any ordinary antagonist. The extreme looseness of its skin renders it a very formidable combatant, for when it is seized by any part of its body, it can turn round, as it were, in its skin, and fix its teeth most unexpectedly in the body of its foe.

Partly for this reason, and partly from the singular endurance of its nature, the Ratel is most tenacious of life, and will be comparatively unhurt by attacks that would suffice to kill many an animal of ten times its size.

During the daytime, the Ratel remains in its burrow; but as evening begins to draw near, it emerges from its place of repose, and sets off on its bee-hunting expeditions. As the animal is unable to climb trees, a bees' nest that is made in a hollow tree-limb is safe from its attacks. But the greater number of wild bees make their nests in the deserted mansions of the termite, or the forsaken burrows of various animals. It is said that the Ratel finds its way towards the bees' nests by watching the direction in which the bees return towards their homes.

The movements of the Ratel are not at all graceful, but the animal is lively enough in captivity, and always affords much amusement to the spectator by the grotesque character of its recreation. One of these creatures, which is familiar to every visitor of the Zoological Gardens, and is in possession of a tolerably large house, is in the habit of constantly going through the most extraordinary performances, and thereby attracting the attention of a numerous body of spectators.

In the enclosure that has been allotted to this animal, the Ratel has, by dint of constantly running in the same direction, made for itself an oval path among the straw that is laid upon the ground. It proceeds over the course which it has worked out, in a quick active trot, and every time that it reaches either end of the course, it puts its head on the ground, turns a complete summersault, and resumes its course. At intervals, it walks into its bath, rolls about in the water for a second or two, and then addresses itself with renewed vigor to its curious antics.

The color of the Ratel is black upon the muzzle, the limbs, and the whole of the under portions of the body; but upon the upper part of the head, neck, back, ribs, and tail, the animal is furnished with a thick covering of long hairs, which are of an ashy-gray color. A bright gray stripe, about an inch in width, runs along each side and serves as a line of demarcation between the light and the dark portions of the fur. The ears of the Ratel are extremely short. The lighter fur of the back is variously tinted in different individuals, some being of the whitish-gray which has been already mentioned, and others remarkable for a decided tinge of red. The length of the Cape Ratel is rather more than three feet, inclusive of the tail, which measures eight or nine inches in length. In its walk it is plantigrade, and has so much of the ursine character in its movements that it has been called the Indian or Honey Bear. It is sometimes known under the title of "Bharsiah."

The animal which has just been described is an inhabitant of Southern Africa, being found in great profusion at the Cape of Good Hope. There is, however, an Indian species of Ratel, which very closely resembles the African animal, and in the opinion of some writers is identical with it.

The Indian Ratel is said to be an extremely voracious animal, prowling about the vicinity of human habitations, and not unfrequently paying a visit to the burial-grounds in search of newly interred corpses. It is necessary for the friends of the deceased person to barricade the grave with thorny bushes, in order to defend it from the sharp and powerful claws of the Ratel, which can work their way through the earth with singular rapidity. It is very commonly found along the course of the Ganges and Jumna, especially frequenting the lofty banks for which those rivers are noted.

It is so expert a burrower that it is said to be able to bury itself beneath the surface in ten minutes, even though working in hard and stiff soil; while digging, it plies its limbs with such exceeding good-will that it flings the loosened soil to a distance of some yards. When

taken young, it is easily tamed, and becomes a very amusing animal, diverting the spectators by the singular antics which it plays. But if an adult specimen should be captured, it cannot reconcile itself to the loss of its liberty, and struggles vainly to make its escape, until it dies from the mingled effects of hunger and excitement.

Flesh of all kind is acceptable to the Indian Ratel, and it seems to have a great predilection for rats, mice, and birds in a living state. It is generally drowsy by day, and only rouses itself from its slumbers at the approach of evening. The natives speak of it under the name of "Beejoo."

THE WOLVERENE, more popularly known by the name of the GLUTTON, has earned for itself a world-wide reputation for ferocity, and has given occasion to some of the older writers on natural history to indulge in the most unshackled liberty of description.

Voracious it certainly is, having been known to consume thirteen pounds of meat in a single day, and it is probable that if the animal had been living in a wild state it could have eaten even a larger amount of food. It was said by the older naturalists to prey upon deer, which it killed by cunningly dropping on the ground a heap of the moss on which the deer feeds, and then climbing upon a branch which overhung the spot. As soon as the deer passed beneath the tree, the Glutton was said to leap upon its shoulders, and to cling there until it had brought the deer to the ground. This and similar tales, however, rest on no good foundation.

It is known that the Glutton feeds largely on the smaller quadrupeds, and that it is a most determined foe to the beaver in the summer months. During the winter it has little chance of catching a beaver, for the animals are quietly ensconced in their home, and their houses are rendered so strong by the intense cold that the Glutton is unable to break through their ice-hardened walls.

The Wolverene is an inhabitant of Northern America, Siberia, and of a great part of Northern Europe. It was once thought that the Glutton and the Wolverene were distinct animals, but it is now ascertained that they both belong to the same species.

The general aspect of this animal is not unlike that of a young bear, and probably on that account it was placed by Linnæus among the bears under the title of Ursus luscus. The general color of the Wolverene is a brownish-black ; the muzzle is black as far as the eyebrows, and the space between the eyes of a browner hue. In some specimens, a few white spots are scattered upon the under jaw. The sides of the body are washed with a tint of a warmer hue. The paws are quite black, and the contrast between the jetty fur of the feet and the almost ivory whiteness of the claws is extremely curious. These white claws are much esteemed among the natives for the purpose of being manufactured into certain feminine adornments.

The paws are very large in proportion to the size of the animal, and it is supposed that this modification of structure is intended to enable the Wolverene to pass in safety over the surface of the snow. Indeed, the feet are so large, that the marks which they leave on the snow are often mistaken for the footprints of a bear. As the tracks of the Wolverene are often mixed with those of the bear, it is evident that the latter animal must often fall a prey to the former during the winter months. When the animal which it kills is too large to form a single meal, the Wolverene is in the habit of carrying away the remains, and of concealing them in some secure hiding-place, in readiness for a second repast.

The eyes of the Wolverene are small, and of a dark brown, and are not remarkable for their brilliancy.

In its native country, the animal is detested by the hunters, whether they belong to Europe or America. For the Wolverene is in the habit of following the sable-hunters on their rounds, and of detaching the baits from the traps, thereby rendering the whole circuit useless. If a sable or marten should happen to be entrapped, the Wolverene does not eat the dead animal, but tears it out of the trap and carries it away. In America, it is specially obnoxious to the hunters, because its fine sense of smell enables it to discover the storehouses of provisions—"caches," as they are technically termed—which the provident hunters lay by in order to fall back upon in case of bad success. If it should unfortunately discover one of these

repositories, it sets itself determinately to work, tears away all obstacles, and does extreme damage to the provisions, by eating all the meat, and scattering the vegetable food.

Another group embraces a few most notorious creatures, the Skunks. The mephitic or bad odor, resulting from the secretion of peculiar glands in these animals, suggests the generic name. The American Skunk is the one *par excellence* of this group. To the average reader it were superfluous to call attention to the renowned attributes of this creature. To the rural denizen, it is one of the salient objects of his earlier memories: to him its possibilities are unutterable, its consequences ineffaceable.

SKUNK.—*Mephitis varians.*

The Skunk has obtained the unenviable reputation of being literally in worse odor than any other known animal. All the weasels are notable for a certain odor which emanates from their persons, but the Skunk is pre-eminent in the utter noisomeness of the stench which it exhales when annoyed or alarmed. To the animal itself, the possession of this horrid effluvium is a most valuable means of defence, for there is no enemy that will dare to attack a creature that has the power of overwhelming its foes with so offensive an odor that they are unable to shake off the pollution for many hours.

There seems to be no animal that can withstand the influence of this abominable odor. Dogs are trained to hunt this creature, but until they have learned the right mode of attacking the fetid game, they are liable to be driven off in consternation. Dogs that have learned the proper mode of attacking the Skunk, do so by leaping suddenly upon the creature, and despatching it before it can emit the fetid secretion. The scent proceeds from a liquid secretion which is formed in some glands near the insertion of the tail, and which can be retained or ejected at will. When the Skunk is alarmed, it raises its bushy tail into a perpendicular attitude, turns its back on its enemy, and ejects the nauseous liquid with some force.

Should a single drop of this horrid secretion fall on the dress or the skin, it is hardly possible to relieve the tainted object of its disgusting influence. A dog, whose coat had suffered from a discharge of a Skunk's battery, retained the stench for so long a time that even after a week had elapsed it rendered a table useless by rubbing itself against one of the legs, although its fur had been repeatedly washed. The odor of this substance is so penetrating that it taints everything that may be near the spot on which it has fallen, and renders them quite useless. Provisions rapidly become uneatable, and clothes are so saturated with the vapor that they will retain the smell for several weeks, even though they are repeatedly washed and dried. It is said that if a drop of the odorous fluid should fall upon the eyes, it will deprive them of sight. Several Indians were seen by Mr. Gresham who had lost the use of their eyes from this cause.

GLUTTON, OR WOLVERENE.

On one occasion, a coach full of passengers was passing along the road, when a Skunk ran across the path and tried to push its way through a fence. Not succeeding in so doing, it evidently seemed to think that the coach was the cause of its failure, and ceasing its attempt to escape, deliberately sent a shower of its vile effluence among the passengers. Secure in its means of defence, the Skunk is remarkably quiet and gentle of demeanor, and has more than once enticed an unwary passenger to approach it, and to attempt to seize so playful and attractive an animal.

Mr. Audubon has recorded a curious adventure which befel him in his younger days. In one of his accustomed rambles, he suddenly came upon a curious little animal, decorated with a parti-colored coat and bushy tail, and so apparently gentle in demeanor that he was irresistibly impelled to seek a nearer acquaintance. As he approached, the creature did not attempt to run away, but awaited his coming with perfect equanimity. Deceived by its gentle aspect, he eagerly ran towards the tempting prize, and grasped it by its bushy tail, which it had raised perpendicularly as if for the purpose of tempting him to make the assault. He soon repented of his temerity, for he had hardly seized the animal when he was overwhelmed with so horrible a substance, that his eyes, mouth, and nostrils were equally offended, and he was fain to fling away the treacherous foe. After this adventure he became very cautious with respect to pretty little playful animals with white backs and bushy tails.

There is a curious analogy between the mode of defence which is employed by the Skunk and that which is used by the cuttle-fish, and in both cases it seems to be the result of various emotions, of which fear and combativeness are the chief.

In its fur, the Skunk is extremely variable, but the general markings of its coat are as follows. The fur is of a brown tint, washed with black, and variegated by white streaks along its back. The tail is long and extremely bushy, being covered with long hairs of a creamy-white hue. Its habitation is commonly in burrows, which it scratches in the ground by means of its powerful claws. The creature is about the size of a cat, being about eighteen inches in length from the nose to the root of the tail, which measures fourteen or fifteen inches. The legs are short, and the animal is not endowed with any great activity by nature. It is an American ainmal, and is found towards the northern parts of the continent.

Scarcely less remarkable for its ill-odor than the skunk, the Teledu is not brought so prominently before the public eye as the animal which has just been described.

It is a native of Java, and seems to be confined to those portions of the country that are not less than seven thousand feet above the level of the sea. On certain portions of these elevated spots, the Teledu, or Stinkard, as it is popularly called, can always be found. The earth is lighter on these spots than in the valleys, and is better suited to the habits of the Teledu, which roots in the earth after the manner of hogs, in search of the worms and insects which constitute its chief food. This habit of turning up the soil renders it very obnoxious to the native agriculturists, as it pursues the worms in their subterraneous meanderings, and makes sad havoc among the freshly-planted seeds. It is also in the habit of doing much damage to the sprouting plants by eating off their roots.

We are indebted to Mr. Horsfield for an elaborate and interesting account of the Teledu, an animal which he contrived to tame and to watch with singular success. The following passages are selected from his memoir.

"The Mydaus forms its dwelling at a slight depth beneath the surface, in the black mould, with considerable ingenuity. Having selected a spot defended above by the roots of a large tree, it constructs a cell or chamber of a globular form, having a diameter of several feet, the sides of which it makes perfectly smooth and regular; this it provides with a subterraneous conduit or avenue, about six feet in length, the external entrance to which it conceals with twigs and dry leaves. During the day it remains concealed, like a badger in its hole; at night it proceeds in search of its food, which consists of insects and other larvæ, and of worms of every kind. It is particularly fond of the common lumbrici, or earth-worms, which abound in

the fertile mould. These animals, agreeably to the information of the natives, live in pairs, and the female produces two or three young at a birth.

"The motions of the Mydaus are slow, and it is easily taken by the natives, who by no means fear it. During my abode on the Mountain Prahu, I engaged them to procure me individuals for preparation; and as they received a desirable reward, they brought them to me daily in greater numbers than I could employ. Whenever the natives surprise them suddenly, they prepare them for food; the flesh is then scarcely impregnated with the offensive odor, and is described as very delicious. The animals are generally in excellent condition, as their food abounds in fertile mould.

"On the Mountain Prahu, the natives who were most active in supplying me with specimens of the Mydaus, assured me that it could only propel the fluid to the distance of about two feet. The fetid matter itself is of a viscid nature: its effects depend on its great volatility, and they spread through a great extent. The entire neighborhood of a village is infected by the odor of an irritated Teledu, and in the immediate vicinity of the discharge it is so violent as in some persons to produce syncope. The various species of Mephitis in America differ from the Mydaus in the capacity of projecting the fetid matter to a greater distance.

"The Mydaus is not ferocious in its manners, and, taken young, like the badger, it might be easily tamed. An individual which I kept some time in confinement afforded me an opportunity of observing its disposition. It soon became gentle and reconciled to its situation, and did not at any time emit the offensive fluid. I carried it with me from Mountain Prahu to Bladeran, a village on the declivity of that mountain, where the temperature was more moderate. While a drawing was made, the animal was tied to a small stake. It moved about quietly, burrowing the ground with its snout and feet, as if in search of food, without taking notice of the bystanders, or making violent efforts to disengage itself; on earth-worms (lumbrici) being brought, it ate voraciously; holding one extremity of a worm with its claws, its teeth were employed in tearing the other. Having consumed about ten or twelve, it became drowsy, and making a small groove in the earth, in which it placed its snout, it composed itself deliberately, and was soon sound asleep."

The color of the Teledu is a blackish brown, with the exception of the fur upon the top of the head, a stripe along the back, and the tip of the short tail, which is a yellowish-white. The under surface of the body is of a lighter hue. The fur is long and of a silken texture at the base, and closely set together, so as to afford to the animal the warm covering which is needed in the elevated spots where it dwells. The hair is especially long on the sides of the neck, and curls slightly upwards and backwards, and on the top of the head there is a small transverse crest. The feet are large, and the claws of the fore limbs are nearly twice as long as those of the hinder paws.

In the whole aspect of the Teledu there is a great resembance to the badger, and, indeed, the animal looks very like a miniature badger, of rather eccentric colors.

There is nothing in nature that is wholly evil, and even this terrible fluid is proved to be possessed of medicinal virtues, being sometimes used for the purpose of giving relief to asthmatic patients. There is rather a curious story respecting a clergyman who had been accustomed to use the scent-glands of the Skunk for this purpose, and to keep them in a closely-stopped bottle. It unfortunately happened, one Sunday, that, having been attacked with a fit of asthma, he took his bottle into the pulpit, and when his breathing became troublesome, he opened the bottle, and applied it to his nostrils. Whether he obtained the required relief or not is not recorded, but he was entirely spared the trouble of going on with his sermon, as the congregation made a hasty retreat, and left him nearly alone in the church.

The chief drawback to the medicinal use of this mephitic substance is, that after it has been in use for some time, the whole frame of the patient becomes so saturated with the vile odor that he is not only unpleasant to his neighbors, but almost unbearable to himself. It would be a curious experiment if any one could force one Skunk to cast its ill-smelling

secretion upon another, in order to discover whether the scent is as nauseous to the animal that secretes it as it is to all other animals.

THE curious animal whose portrait is presented to the reader is known under several titles, among which the SAND-BEAR is that by which it will be designated in these pages. It is also called the Indian Badger, and sometimes the Balisaur, a name which is corrupted from the Hindostanee word Balloo-soor, signifying Sand-Hog. There is a very great resemblance between this animal and the well-known badger, from which creature, however, it may easily be distinguished by the greater comparative length of its legs, and the more hog-like snout.

The general color of the fur of the Sand-Bear is a yellowish-white, diversified by two black bands that run on each side of the head, and unite by the muzzle. The upper of these bands includes the ear and eye in its course, and curves downwards at the shoulder, where it is

SAND-BEAR, OR BALISAUR.—*Arctonyx collaris.*

nearly met by the dark hue of the fore-limbs. The claws are slightly curved, extremely powerful, and well suited for digging in the ground, as the toes are united for their entire length. The tail is extremely short.

In its wild state the Sand-Bear is said to be fierce in disposition, and sufficiently powerful to beat off a dog that would not hesitate to attack a wolf or a hyena. When attacked or irritated, the Sand-Bear raises itself on its hind legs, after the manner of the bears, and threatens its antagonist with its fore-limbs, in which it seems fully to trust. Its food is of a mixed character, but appears to be more of a vegetable than an animal nature. It is not a very common animal, and is generally found in the hill country.

ALTHOUGH one of the most quiet and inoffensive of our indigenous animals, the BADGER has been subjected to such cruel persecutions as could not be justified even if the creature were as destructive and noisome as it is harmless or innocuous. For the purposes of so-called "sport," the Badger was captured and kept in a cage ready to be tormented at the cruel will of every ruffian who might choose to risk his dog against the sharp teeth of the captive animal.

Although the Badger is naturally as harmless an animal as can be imagined, it is a terrible antagonist when provoked to use the means of defence with which it is so well provided. Not only are the teeth long and sharp, but the jaws are so formed, that when the animal closes its mouth the jaws "lock" together by a peculiar structure of their junction with the skull, and retain their hold without the need of any special effort on the part of the animal.

Unlike the generality of the weasel tribe, the Badger is slow and clumsy in its actions,

and rolls along so awkwardly in its gait that it may easily be mistaken for a young pig in the dark of the evening, at which time it first issues from its burrow. The digging capacities of the Badger are very great, the animal being able to sink itself into the ground with marvellous rapidity. For this power the Badger is indebted to the long curved claws with which the fore-feet are armed, and to the great development of the muscles that work the fore-limbs.

When the Badger is employed in digging a burrow, it makes use of its nose in order to push aside the earth, which is then scraped away by the fore-paws and flung as far back as possible. In a very short time, the accumulation of earth becomes so considerable that it impedes the animal's movements, and if permitted to remain would soon choke up the tunnel which the miner is so industriously excavating. The hinder paws are now brought into play, and the earth is flung farther back by their action. As the excavation proceeds, the accumu-

BADGER.—*Meles taxus.*

lated earth becomes so inconvenient that the Badger is forced to remove it entirely out of the burrow, by retrograding from its position and pushing the loose earth away in its progress. Having thus cleared the tunnel from the impediment, the Badger proceeds to fling the earth as far away as possible, and until it has done so will not resume its labors.

In this burrow the female Badger makes her nest and rears her young, which are generally three or four in number. The nest is made of well-dried grass, and stored with provisions in the shape of grass-balls, which are firmly rolled together, and laid up in a kind of supplementary chamber that acts the part of a larder. There are also several ingeniously contrived sinks, wherein are deposited the remnants of the food and other offensive substances.

The food of the Badger is of a mixed character, being partially vegetable and partly animal. Snails and worms are greedily devoured by this creature, and the wild bees, wasps, and other fossorial hymenoptera find a most destructive foe in the Badger, which scrapes away the protecting earth and devours honey, cells, and grubs together, without being deterred from its meal by the stings of the angry bees. The skin of the Badger is so tough, and lies so loosely on the body, that even if a bee or a wasp could find a bare spot wherein to plant its sting, the Badger would in all probability care little for the wound; and as the covering of hair is so dense that no bee-sting can force its way through the furry mantle, the Badger is able to feast at its ease, undisturbed by the attacks of its winged antagonists.

As is the case with the generality of weasels, the Badger is furnished with an apparatus which secretes a substance of an exceedingly offensive odor, to which circumstance is probably owing much of the popular prejudice against the "stinking brock."

The Badger is very susceptible of human influence, and can be effectually tamed with but little trouble. It is generally set down as a stupid animal, but in reality is possessed of considerable powers of reasoning. One of these animals has been known to set at defiance all the traps that were intended for its capture, and to devour the baits without suffering for its temerity. On one occasion, the animal was watched out of its burrow, and a number of traps set round the orifice, so that its capture appeared to be tolerably certain. But when the Badger returned to its domicile, it set at nought all the devices of the enemy, and by dint of jumping over some of the traps and rolling over others, gained its home in safety.

The colors of the Badger are gray, black, and white, which are rather curiously distributed. The head is white, with the exception of a rather broad and very definitely marked black line

SEA OTTER, OR KALAN.—*Enhydris marina.*

on each side, commencing near the snout and ending at the neck, including the eye and the ear in its course. The body is of a reddish-gray, changing to a white-gray on the ribs and tail. The throat, chest, abdomen, legs and feet, are of deep blackish-brown. The average length of the Badger is two feet six inches, and its height at the shoulder eleven inches.

The American Badger (*Taxidea americana*) is widely distributed throughout the United States, ranging from Wisconsin to the Pacific, reaching far to the north. Though this animal resembles in general features the European species, very considerable differences are known.

A Mexican species replaces this Badger below latitude 35°.

Upon the northern shores of the Pacific Ocean, and especially in those parts where the Asiatic and American continents approach nearest to each other, an extremely large species of Otter is found, which has the peculiarity of preferring the sea-coast to the fresh-water lakes and rivers for the greater part of the year.

The Kalan, or Sea Otter, is very much larger than its fresh-water relations, being rather more than twice the size of the common Otter, and weighing as much as seventy or eighty pounds. During the colder months of the year, the Kalan dwells by the sea-shores, and can be

found upon the icy coasts of the Northern Pacific, where it is extremely active in the capture of marine fish. When the warmer months begin to loosen the icy bonds of winter, the Sea Otter leaves the coasts, and in company with its mate proceeds up the rivers until it reaches the fresh-water lakes of the interior. There it remains until the lessening warmth gives warning for it to make its retreat seawards before the fierce frosts of those northern regions seal up the lakes and deprive it of its means of subsistence.

It is rather a scarce animal, and is not so prolific as many of its relations. The fur of the Kalan is extremely beautiful, shining with a glossy velvet-like sheen, and very warm in character. It is in consequence valued at a very high price. The color of the fur is rather variable, but its general hue is a rich black, slightly tinged with brown on the upper portions of the body, while the under portions of the body and the limbs are of a lighter hue. In some specimens the head is nearly white, and in one or two instances the white tinge extends as far as the neck. Indeed, the proportions of dark and white fur differ in almost every individual.

All the Otters are long of body and short of limb, but in the Kalan this peculiarity is more apparent than in the ordinary Otters, on account of the curious setting on of the hinder limbs and the comparative shortness of the tail, which is barely more than seven inches long, while the head and body measure three feet in length. The food of the Sea Otter is not restricted to fish, but is composed of various animal productions, such as crustacea and mollusks. Some writers assert that, in default of its more legitimate food, it varies its diet by sea-weeds and other vegetable substances.

The North American Otter (*Lutra canadensis*) was formerly abundant in the New England States, but is now exceedingly scarce. A specimen was captured lately by Dr. Wood, of East Windsor Hill, in the Connecticut River.

One of the most surprising habits known to animals is that of the Otter sliding down a declivity for pleasure. In winter they select a high bank of snow, and amuse themselves for hours in sliding down head-foremost. In summer they choose a steep bank by the side of a stream, which terminates in deep water. Here they indulge in the same recreation. This would seem wholly incredible, did not Audubon and other reliable observers give us the facts. They live in small families, like the beavers, and bring forth two young at a birth, in March. A California species is known, very closely resembling the Eastern.

The Sea Otter suggests the seals, being so organized as to be fitted for almost continuous living in the sea; differing greatly in this respect from the Land Otters.

Although by no means a large animal, the Common Otter of Europe has attained a universal reputation as a terrible and persevering foe to fish. Being possessed of a very discriminating palate, and invariably choosing the finest fish that can be found in the locality, the Otter is the object of the profoundest hate to the proprietors of streams and by all human fishermen. It is so dainty an animal that it will frequently kill several fish, devouring only those portions which best please its palate, and leaving the remainder on the banks, to become the prey of rats, birds, or other fish-loving creatures.

When the Otter is engaged in eating the fish which it has captured, it holds the slippery prey between its fore-paws, and, beginning with the back of the neck, eats away the flesh from the neck towards the tail, rejecting the head, tail, and other portions. In well-stocked rivers, the Otter is so extremely fastidious that it will catch and kill four or five good fish in a single day, and eat nothing but the fine, flaky meat which is found on the shoulders. The neighboring rustics take advantage of this epicurean propensity, and make many a meal upon the fish which have been discarded by the dainty Otter. Sometimes, as in the very dry or the very cold seasons, the Otter is forced to lay aside its fastidious notions, and is glad to find an opportunity of appeasing its hunger with any kind of animal food. Driven by hunger, the Otter has been known to travel overland for five or six miles, and is sometimes so hardly pressed that it will have recourse to vegetable substances in default of its usual animal food. In such trying seasons, the Otter is too apt to turn its attention to the farm-yard, and to become very destructive to poultry of all kinds, to young pigs, and lambs. One of these animals was cap-

tured in a rabbit-warren, whither it had evidently wandered with the intention of feeding on the rabbits.

For the pursuit of its finny prey, the Otter is admirably adapted by nature. The body is lithe and serpentine; the feet are furnished with a broad web that connects the toes, and is of infinite service in propelling the animal through the water; the tail is long, broad, and flat, proving a powerful and effectual rudder by which its movements are directed; and the short, powerful legs are so loosely jointed that the animal can turn them in almost any direction. The hair which covers the body and limbs is of two kinds, the one a close, fine, and soft fur, which lies next the skin and serves to protect the animal from the extremes of heat and cold, and the other composed of long, shining, and coarser hairs, which permit the animal to glide easily through the water. The teeth are sharp and strong, and of great service in preventing the slippery prey from escaping.

The color of the Common Otter also varies slightly according to the light in which it is viewed, but is generally of a rich brown tint, intermixed with whitish-gray. This color is lighter along the back and the outside of the legs than on the other parts of the body, which are of a paler grayish hue. Its habitation is made in the bank of the river which it frequents, and is rather inartificial in its character, as the creature is fonder of occupying some natural crevice or deserted excavation than of digging a burrow for itself. The nest of the Otter is composed of dry rushes, flags, or other aquatic plants, and is purposely placed as near the water as possible, so that in case of a sudden alarm the mother Otter may plunge into the stream together with her young family, and find a refuge among the vegetation that skirts the river banks. The number of the young is from three to five, and they make their appearance about March or April.

Although at the present day the custom of Otter-hunting has in most parts of Europe necessarily fallen into disuse, it sometimes occurs that a stray Otter is discovered in some stream, and is in consequence the subject of continual annoyances until it finally falls under the hands of its persecutors. When attacked, the Otter is a fierce and desperate fighter, biting and snapping with the most deadly energy, and never yielding as long as life remains within the body. The bite of an angry Otter is extremely severe; for the creature has a habit of biting most savagely, and then shaking its head violently, as if it were trying to kill a rat. There are few dogs which can conquer an Otter in fair fight, and the combat is generally ended by the spear of one of the hunters. Even when transfixed with the deadly weapon, the Otter gives no sign of yielding, but furiously bites the staff, sullen and silent to the last.

The track which the Otter makes upon the bank is easily distinguishable from that of any other animal, on account of the "seal," or impression, which is made by a certain round ball on the sole of the foot. On account of the powerfully-scented secretion with which the Otter is furnished by nature, it is readilly followed by dogs, who are always eager after the sport, although they may not be very willing to engage in single fight with so redoubtable an opponent. An Otter has been known to turn savagely upon a dog that was urged to attack it, to drag it into the water, and to drown it. The best dogs for the purpose are said to be the Otterhounds, which have already been mentioned on page 237. Even human foes are resisted with equal violence. On one occasion, an Otter was hard pressed in the water, and endeavored to escape into an open drain, when it was prevented from carrying out its purpose by one of the hunters, who grasped it by the tail, and tried to force it into the water. The aggrieved animal twisted itself sharply round, and made so savage a snap at its antagonist's hand that it severed the end of his thumb at a single bite. When the Otter has once fairly fixed its teeth, it cannot be forced to relinquish its grasp without the greatest difficulty; and even when it is dead its jaws are said to retain their hold with unremitting firmness. When the animal is hunted, it swims and dives with such singular agility that the only mode of effecting its capture is by watching its progress below the surface by means of the train of air-bubbles which mark its course, and by forcing it to dive again before it has recovered its breath. By a repetition of this manœuvre the poor creature is wearied, and at last falls an unwilling prey.

The fur of the Otter is so warm and handsome that it is in some request for commercial purposes. The entire length of the animal is rather under three feet and a half, of which the

tail occupies about fourteen or fifteen inches. On the average, it weighs about twenty-three pounds; but there are examples which have far surpassed that weight. Mr. Bell records an instance of a gigantic Otter that was captured, which weighed forty pounds.

ALTHOUGH so fierce and savage an animal when attacked, the Otter is singularly susceptible of human influence, and can be taught to catch fish for the service of its masters rather than for the gratification of its own palate. The CHINESE or INDIAN OTTER affords an excellent instance of this capability; for in every part of India the trained Otters are almost as common as our trained dogs. It seems odd that the proprietors of streams should not press the Otter into their service instead of destroying it, and should not convert into a faithful friend the animal which at present is considered but as a ruthless enemy.

Even in France and England the Indian Otter has frequently been tamed and trained for the purposes of sport. An English sporting man was possessed of one of these animals, which had been trained with singular success. "When called, the Otter immediately answered to the appropriate name of Neptune. The animal, it appeared, was caught two years ago, being then only a few weeks old. It was actually suckled by a pointer, and, showing early signs of docility, was made over to the gamekeeper. In process of time, the animal increased in aptitude and sagacity, and was soon enabled to undertake the duty of an economical fisherman, frequently procuring a dish of excellent burn trout at such seasons when the angler's art, from adverse winds or foul streams, was in vain.

"In the morning after these fishing exploits, which sometimes occupied the greater part of the night, Neptune was always found at his post, and the stranger might be astonished to see him among several brace of pointers and greyhounds. No one understood better how to keep at his own side of the house. In fact, according to the gamekeeper, he was 'the best cur that ever ran.'

"Neptune was an amiable creature. He would allow himself to be gently lifted by his tail, but invariably objected to any interference with his snout. As an angler, his reputation is advancing rapidly, and one or two of his master's neighbors used to borrow him for a day or two in the spring, for the purpose of ascertaining the quality and size of the larger trout in the pools on their estates."

Another of these animals was accustomed to go to work in a very systematic manner. It always plunged into the water very quietly, and, keeping close by the bank, took its course up the stream, disturbing the fish by smart blows with its tail. If a fish remained by the bank, the Otter passed by and did not seem to notice it, but if the fish should dart in front of its pursuer, it was instantly seized and brought near the surface of the water—probably in order to lessen the force of its struggles. When the Otter had brought its prey to shore, it always discovered some reluctance in parting with the fish which it had caught, and signified its disapprobation by a plaintive whine.

Mr. Richardson gives a very interesting account of an Otter which he tamed, and which was accustomed to follow him in his walks like a dog, sporting by his side with graceful playfulness, and swimming at perfect liberty in the stream. This animal, however, could never be induced to yield her prey to her master, but when she saw him approaching would quickly swim to the opposite bank of the river, lay down her fish, and eat it in peace. The animal was accustomed to wander at her own will in the house and garden, and would eat all kinds of garden pests, such as snails, worms, and grubs, detaching the snails from their shells with great dexterity. She would also leap upon the chairs as they stood by the windows and catch and eat flies as they fluttered on the window-panes. She struck up a warm friendship with an Angora cat, and on one occasion when her friend was attacked by a dog, she flew at the assailant, seized him by the jaw, and was so excited that her master was obliged to separate the combatants and to send the dog out of the room.

The mode of instruction which is followed in the education of the Otter is sufficiently simple. The creature is by degrees weaned from its usual fish diet, and taught to live almost wholly on bread and milk; the only fish-like article which it is permitted to see being a leathern caricature of the finny race, with which the young Otter is habituated to play, as a kitten plays

with a crumpled paper or a cork, which does temporary duty for a mouse. When the animal has accustomed itself to chase and catch the artificial fish, and to give it into the hand of its master, the teacher extends his instructions by drawing the leathern image smartly into the water by means of a string, and encouraging his pupil to plunge into the stream after the lure and bring it ashore. As soon as the young Otter yields the leathern prey, it is rewarded by some dainty morsel which its teacher is careful to keep at hand, and soon learns to connect the two circumstances together.

Having become proficient in the preliminary instructions, the pupil is further tested by the substitution of a veritable, but a dead fish, in lieu of the manufactured article, and is taught to chase, capture, and yield the fish at the command of its master. A living fish is then affixed to a line in order to be brought by the Otter from the water in which it is permitted to swim; and lastly, the pupil is taught to pursue and capture living fish, which are thrown into the water before its eyes. The remaining point of instruction is to take the so-far trained animal to the water-side, and induce it to chase and bring to shore the inhabitants of the stream, as they rove free and unconstrained in their native element.

In many parts of the world the Otter is admirably trained for this purpose, and is taught to aid its master, not only by capturing single fish, but by driving whole shoals of fishes into the ready nets.

When in pursuit of its finny prey, the Otter displays a grace and power which cannot be appreciated without ocular investigation. The animal glides through the watery element with such consummate ease and swiftness, and bends its pliant body with such flexible undulations, that the quick and wary fish are worsted in their own art, and fall easy victims to the Otter's superior aquatic powers. So easily does it glide into the water, that no sound is heard, and scarcely a ripple seen to mark the time or place of its entrance; and when it emerges upon the shore, it withdraws its body from the stream with the same noiseless ease that characterizes its entrance. The Otter is a playful creature, and is very fond of engaging in mock aquatic combats, which display the extraordinary powers of the creature to the very best advantage. When on shore, the Otter can proceed at a considerable pace, and when in haste, employs a curious "loping" gallop as its means of progression.

During the progress of this work, several allusions have been made to the destructive principle, as illustrated in the character of certain animals, and a few suggestions have been offered as to its origin, its manifestation, and its object. The subject is too deep in its purport and too wide in its bearings to be comprehended within the limits of a single article, and it must therefore be resumed from time to time, as its various phases are exemplified by the nature of the various creatures which draw the breath of life.

As in the animals which have already been mentioned the principle of terrestrial destruction has been manifested, so we find a further development of the same idea in the Otter, the destroyer of the waters. In order that we may rightly appreciate the part which the Otter plays in the great and ever-changing drama of Nature, it needs that we should as far as possible place ourselves in the position of the creatures among whom its destructive mission is fulfilled.

A shoal of fish is swimming quietly through the clear stream, thinking of nothing but themselves, their food, and their physical enjoyment of existence. Suddenly from some unknown sphere, of which they can form no true conception, comes flashing among them a strange and wondrous being, from whose presence they flee in instinctive terror. Flight is in vain from the dread pursuer, which seizes one of their companions in its deadly grasp, and in spite of the resistance of the struggling prey, bears it away into an unknown realm, whose wonders their dim sight cannot penetrate, and whose atmosphere is too ethereal for their imperfect frames to breathe and live. Ever and anon the terrible pursuer is mysteriously among them, like the destroying angel among the Egyptians, and, as often as it is seen, snatches away

one of their number in its fatal grasp, and vanishes, together with its victim, into the unseen realms above.

To the fish the Otter must appear as a supernatural being, for it comes from a world which is above their comprehension, and returns thereto at will, a visible and incarnate Death. All animals, creations, and existences have some idea of a being that is superior to themselves, and that being which to their minds conveys the highest idea, is to them the Divinity. So that to the fish, the Otter may stand in the light of deity—a remarkable type of the heathen ideas of the Divine nature.

As various races and individuals of mankind are endowed with greater or smaller capacities, they must form an idea of a deity which is consonant with their own natures, and it therefore follows that the loftiest natures will worship the highest God. Therefore, we find in the history of the Israelitish nation, that the narrow-minded Jews copied the surrounding heathens in paying their fearful worship to the fiery Moloch, the cruel and murderous deity of wrath; while the poets and prophets prostrated their spirits in loving adoration before Jehovah, the great Source of all, from whom, through whom, and by whom all things, beings, and essences came into existence.

At the present day, and even in this country, the same contracted ideas are too evident, for there are many narrow-minded persons who are incapable of receiving a deity that is more loving than themselves, and can only appreciate one that is more powerful. Their form of praise is expressed by fear and trembling, and the amount of their reverence is measured by the amount of punishment which they think he can inflict upon them. So with the savage natives of the Southern seas, who consistently honor the representations of their deity by piteous deprecations of his anger, and lie trembling before him in slavish fear. Servile terror is the form of respect which they pay towards those whom they honor, and which they unscrupulously exact from those by whom they desire to be honored.

Still, there is a great truth in this power-worship of the savage and undeveloped nature, for it is a step in the improvement of the human race when they learn to acknowledge any being as superior to themselves, even though the ground on which they base that superiority may not be of the most elevated description. For all power, of whatever kind, is in its essence spiritual, however material and even revolting its outer manifestations may appear, and is therefore an attribute of the Supreme, although misunderstood and misapplied.

In reality, the attribute which we call Destruction ought to be termed Conservation and Progression, for without its beneficent influence all things would be limited in their number and manifestation as soon as they first came into existence, and there would be no improvement in physical, moral, or spiritual natures. In such sad case, it would be possible to find a centre and circumference to creation, whereas it is truly as unlimited as the very being of its Creator.

Suppose, for example, that the huge Saurians of the geological eras had been permitted to retain their place upon the earth, and that the land and water were overrun with megatheria, iguanodons, and other creatures of like nature. Suppose, to take our own island as a limited example, that the land was peopled with the naked and painted savages of its ancient times, unchanged in numbers, in habits, and in customs. It is evident that in either case the country would be unable to retain the higher animals and the loftier humanity of the present day, and that in order to escape absolute stagnation it is a necessity that old things should pass away and that the new should take their place. How limited would not the human race be were it not subject to physical death! But a very few years and the earth would be over-peopled, setting aside the question of bodily nourishment, which requires the destruction of other beings, either animal or vegetable. The same rule holds good with regard to moral as well as physical improvement, for it is necessary that all mental progress should be caused by a continual destruction, a death of erroneous ideas, before the corresponding truths can obtain entrance into the mind.

Apply the same principle to the entire creation, and it will become evident that the destructive attribute is essentially the preserver and the improver. Death, so-called, is the best guardian of the human race, and its preserver from the most terrible selfishness and the

direst immorality. If men were unable to form any conception of a future state, and were forced to continue in the present phase of existence to all eternity, they would naturally turn their endeavors to collecting as much as possible of the things which afford sensual pleasure, and each would lead an individual and selfish life, with no future for which to hope, and no aim to which to aspire.

The popular error respecting the destructive principle is, that it is supposed to be identical with annihilation, than which notion nothing can be more false in itself, or more libellous to the Supreme Creator of all things. Death is to every man a terror, an abasement, or an exaltation, as the case may be; but, in truth, to those who are capable of grasping this most beautiful subject, destruction is shown as transmutation, and death becomes birth. Nothing that is once brought into existence can ever be annihilated, for the simple reason that it is an emanation of the Deity, who is life itself, essential, eternal, and universal. The form is constantly liable to mutation, but the substance always remains.

In every pebble that lies unheeded on the ground are pent sundry gaseous substances, which only await the delivering hand of the analyzer to be liberated and expanded; possessing in their free and etherealized existence many powers and properties which they were debarred from exercising while imprisoned in their condensed and materialized form. To the ordinary observer, the stone thus transmuted in its form appears to be destroyed, but its apparent death is in reality the beginning of a new life, with extended powers and more ethereal substance. Thus it is that physical death acts upon mankind, and in that light is it regarded by the true and brave spirit, with whom to live is toil, and death is a new birth into life, of which he is conscious even here. Death is to such minds the greatest boon that could be conferred upon them, for just as the destruction or death of the pebble etherealizes and expands the elements of its being, so by the death or destruction of the body, the spirit is liberated from its material prison, and humanity is divinized through death.

THE BEAR FAMILY.

BEARS.

THE BEARS and their allies form a family which is small in point of numbers, but is a very conspicuous one on account of the large size of the greater number of its members, and the curious habits of the entire family of the Ursidæ, as these creatures are learnedly named, from the Latin word *ursus*, which signifies a Bear.

These animals are found in almost every portion of the earth's surface, and are fitted by nature to inhabit the hottest and the coldest parts of the world. India, Borneo, and other burning lands are the homes of sundry members of this family, such as the Bruang and the Aswail, while the snowy regions of Northern Europe and the icebound coasts of the Arctic Ocean are inhabited by the Brown Bear and the Nennook or Polar Bear. The diet of the Ursidæ is of a mixed character, and the creatures appear to be capable of sustaining existence upon a purely animal or purely vegetable diet, or to be carnivorous or vegetarian at will. Indeed, it is found that when Bears are kept in captivity, they may be restricted to vegetable food with the best result, both to themselves and their owners. With a few rare exceptions, the bears are singularly harmless animals when undisturbed, contenting themselves with fruit, honey, nuts, snails, roots, and other similar articles of diet, and rarely attacking the higher animals, except when driven by necessity.

In their gait the Bears are all plantigrade, and on account of the large surface which is placed on the ground when they walk, they are capable of erecting themselves on their hinder limbs, and of supporting themselves in an erect position with the greatest ease. When attacked in close combat, they have a habit of rearing themselves upon their hinder feet, and

of striking terrific blows with their fore-paws, which, if they take effect upon their object, cause the most dreadful injuries.

The paws of the Bears are armed with long and sharp talons, which are not capable of retraction, but which are most efficient weapons of offence when urged by the powerful muscles which give force to the Bear's limbs. Should the adversary contrive to elude the quick and heavy blows of the paw, the Bear endeavors to seize the foe round the body, and by dint of sheer pressure to overcome its enemy. In guarding itself from the blows which are aimed at it by its adversary the Bear is singularly adroit, warding off the fiercest strokes with a dexterity that might be envied by many a pretender to the pugilistic art.

Few antagonists are so formidable to the experienced hunter as the Bear, whether it be the Brown Bear of Northern Europe, the Black or Grizzly Bear of America, the Aswail of India, or the Polar Bear of the Arctic regions; and although there are a few instances where a man has conquered a Bear in fair hand-to-hand combat, there are a few animals whom a hunter would not rather oppose than the Bear, provided that he were deprived of fire-arms, and furnished only with a knife or hatchet. On one or two occasions, a foolhardy and ignorant person has ventured to attack and to kill a Bear in single combat, but in such instances the victory has almost always been attributable to some accident which never could have been foreseen, and on which no real hunter would have calculated. In fact, the more experienced the hunter, the less will he venture himself against the beast, which, according to Scandinavian aphorism, "has the strength of ten men and the sense of twelve."

With fearful ingenuity, the Bear, when engaged with a human foe, directs its attacks upon the head of its antagonist, and if one of its powerful strokes should take effect, has been known to strike the entire scalp from off the head at a single blow. Mr. Lloyd, who had the great misfortune to be struck down by a Bear, and the singular good fortune to escape from its fangs, says that when he was lying on the ground at the mercy of the angry beast, the animal, after biting him upon the arms and legs, deliberately settled itself upon his head, and began to scarify it in the most business-like manner, leaving wounds of eight and nine inches in length. The experience of this practiced Bear-hunter goes to show that the Bear does not make use of its claws when its opponent has been once struck down, but inflicts its subsequent injuries wholly with its teeth. It does not appear from Mr. Lloyd's account that the senses of a person who is seized by a Bear are blunted in the manner which takes place when a lion or tiger is the assailant.

All the Bears are the more terrible antagonists from their extreme tenacity of life, and the fearful energy which they compress into the last moment of existence when they are suffering from a mortal wound. Unless struck in the heart or brain, the mortally wounded Bear is more to be feared than if it had received no injury whatever, and contrives to wreak more harm in the few minutes that immediately precede its decease than it had achieved while still uninjured. Many a hunter has received mortal wounds by incautiously approaching a Bear which lay quiescent in apparent death, but was really only stunned for the moment by the shock of the injury which it had received, and which in a very few minutes would have deprived it of life.

Several species of Bears are now recognized by systematic naturalists, the principal examples of which will be noticed in the following pages.

The Brown Bear is a creature which is found rather plentifully in forests and the mountainous districts of many portions of Europe and Asia. As may be supposed from its title, the color of its fur is brown, slightly variable in tint in different individuals, and often in the same individual at various ages. In many specimens it is found that the neck is encircled with a white band when the animal is young, but that this curious mark is soon merged into the general brown tint of the fur as the animal increases in years and dimensions. This white neck-band was once supposed to be the mark of a male cub, but is now ascertained that it belongs equally to the male and female sex. In general it is merged into the brown fur after the second or third year, but in some instances it remains throughout the entire life of the animal, which is on that account termed a "Ring Bear."

The size to which a well-fed and undisturbed Brown Bear will grow is really surprising,

for although it loses its growing properties after its twentieth year, it seems permanently to retain the capability of enlargement, and when in a favorable situation will live to a very great age. The weight of an adult Brown Bear in good condition is very great, being sometimes from seven to eight hundred pounds when the creature is remarkably fine, and from five to six hundred pounds in ordinary cases. Mr. Falk remarks that a Bear which he killed was so enormously heavy, that when slung on a pole it was a weighty burden for ten bearers.

The Brown Bear is not so formidable a foe to cattle and flocks as might be supposed from the strength, courage, and voracity of the animal, as it has been often known to live for years in the near vicinity of farms without making any inroads upon the live stock. Fortunately for the farmers and cattle owners of Northern Europe, the Brown Bear is chiefly indebted for its food to roots and vegetable substances, or the sheds and folds would soon be depopulated. As a general fact, the Bear does not trouble itself to pursue the cattle, and in many cases owes its taste for blood to the absurd conduct of the cattle, which are apt to bellow and charge at the Bear as soon as it makes its appearance. The Bear is then provoked to retaliation, and in so doing, learns a taste for blood which never afterwards deserts it.

When a Bear has once taken up the business of cattle-stealing, there is no peace in the neighborhood until the country is freed from the presence of the marauder. It is said that the Bear is more virulent in the destruction of cattle when the weather is wet and cloudy than when it is dry and clear.

Ants form a favorite article of diet with the Bear, which scrapes their nests out of the earth with its powerful talons, and laps up the ants and their so-called "eggs" with its ready tongue. Bees and their sweet produce are greatly to the taste of the Bear, which is said to make occasional raids upon the bee-hives, and to plunder their contents.

Vegetables of various kinds are favorite articles of diet with the Bear, and in the selection of these dainties the animal evinces considerable taste. According to Mr. Lloyd, "the Bear feeds on roots, and the leaves and small limbs of the aspen, mountain-ash, and other trees; he is also fond of succulent plants, such as angelica, mountain-thistle, etc. To berries he is likewise very partial, and during the autumnal months, when they are ripe, he devours vast quantities of cranberries, blueberries, raspberries, strawberries, cloudberries, and other berries common to the Scandinavian forests. Ripe corn he also eats, and sometimes commits no small havoc amongst it; for seating himself, as it is said, on his haunches in a field of it, he collects with his outstretched arms nearly a sheaf at a time, the ears of which he then devours."

Even in captivity the Bear retains this fruit-loving propensity. One of these animals, which was being maltreated by a cruel owner, was benevolently purchased by one of my friends, a military officer, who had no sooner concluded the bargain than he repented of his kindness, for the Bear was so demonstrative in its expressions of gratitude that he began to be rather uneasy, and having no possible locality wherein to lodge his new acquisition, he felt himself in some perplexity as to its lodging. However, he got the Bear into a post-chaise, and having taken the precaution to purchase a great many bottles of strawberries, he urged the post-boy to drive at his best speed, and set himself to propitiate his new acquaintance. The Bear took the strawberries in a very polished manner, and ate them deliberately, rejecting the green calices as fastidiously as if it had been accustomed to good society all its life. However, the fruit vanished so fast, that the unfortunate proprietor became alarmed for his own safety, and was not fairly relieved from his fears until he was deposited at the door of the barracks in which the headquarters of his regiment were at that time established. The Bear, on seeing so many blue-coated strangers, became alarmed in its turn, and fled for protection to the only person with whom it was acquainted.

It so happened that the mess dinner was just served, and that the proprietor of the Bear had but time to make a hasty toilet, and gain the mess-room. On this occasion the commanding officer was delayed for a few minutes, and while the assembled guests were awaiting his arrival, the Bear walked into the room, having sniffed its way after its master. The unex-

pected intruder advanced to the table, and, mounting upon the colonel's chair, began to inspect the festive arrangements. Just as the Bear had lifted a dish-cover off the joint at the head of the table—a feat which it performed as dexterously as if it had been accustomed to wait at table all its life—the cōlonel entered the room, and when he saw the strange intruder who had taken such unceremonious possession of his seat, he demanded, with some irritation, "who brought the animal there?" and was told he was only a friend of the officer.

The Bear speedily became a favorite in the regiment, and was promoted to the office of sentinel over the property contained in a baggage-wagon. Unfortunately, the poor animal's sense of justice was so acute that it executed its responsible office with too much zeal. On one occasion, a soldier had gone to the wagon with the intention of robbing it of some of the property contained therein, and quietly inserted his arm under the coverings. His intended depredation

BROWN BEAR.—*Ursus arctos.*

was, however, soon checked by the teeth of the watchful Bear, which bit his arm with such severity that the limb was rendered useless for the rest of the man's life. Some little time after this occurrence, a child belonging to the regiment made a similar attempt upon the wagon, and was killed by the Bear in its anxiety to fulfil the trust that had been committed to its charge. As the animal was manifestly an unsafe one, and it was feared that the creature might gain a thirst for blood, it was condemned to be shot, although not without much regret on the part of judge and executioners.

The various military adventures of this Bear are very curious, but would occupy too large a space for the present work.

During the autumn, the Bear becomes extremely fat, in consequence of the ample feasts which it is able to enjoy, and makes its preparations for passing the cold and inhospitable months of winter. About the end of October the Bear has completed its winter house, and ceases feeding for the year. The saccharine-loving instinct of the Bear which leads it to discover a bee's nest, however carefully it may be concealed, and to undergo much toil and trouble for the sake of the sweet banquet, seems to be given to the animal for the purpose of enabling it to lay up within its own body a supply of fat which shall serve the double purpose of sustaining the creature in proper condition during its long fast, and of loading the body with carbon for the purpose of producing the state of lethargy, in which the animal passes

the winter. It is well known that sugar has the property of producing fat to a very great extent, and as it possesses more of the saccharine property than any other natural substance, the Bear is led by its instinct to search for and to devour this valuable food with untiring assiduity.

Again, the excess of carbon, whether it be diffused in the atmosphere or concentrated in the body, is always productive of sleep, or rather of lethargy, as is seen by the constant drowsiness of human beings when overloaded with this condensed carbon, or when they are placed in a room which is charged with the carbonic acid gas that has been exhaled from the lungs of its inhabitants.

A curious phenomenon now takes place in the animal's digestive organs, which gives it the capability of remaining through the entire winter in a state of lethargy, without food, and yet without losing condition. As the stomach is no longer supplied with nourishment, it soon becomes quite empty, and, together with the intestines, is contracted into a very small space. No food can now pass through the system, for a mechanical obstruction—technically called the "tappen"—blocks up the passage, and remains in its position until the spring. The "tappen" is almost entirely composed of pine-leaves, and the various substances which the Bear scratches out of the ants' nests.

From the end of October to the middle of April the Bear remains in his den, in a dull, lethargic state of existence; and it is a curious fact that if a hybernating Bear be discovered and killed in its den it is quite as fat as if it had been slain before it retired to its resting-place. Experienced hunters say that even at the end of its five months' sleep, the Bear is as fat as at its beginning. Sometimes it is said that the Bear loses the "tappen" too soon, and in that case it immediately loses its sleek condition, and becomes extremely thin. During the winter, the Bear gains a new skin on the balls of the feet, and Mr. Lloyd suggests that the curious habit of sucking the paws, to which Bears are so prone, is in order to facilitate the growth of the new integument.

The den in which the Bear passes a long period of its life is mostly found under the sheltering defence of rocks or tree-roots, but is sometimes composed of moss which the Bear gathers into a hillock, and into which it creeps. These moss-houses are not so easily discovered as might be supposed, for the habitation bears a very close resemblance to an ordinary hillock, and when the ground is covered with a uniform carpet of snow, might easily be passed without detection.

Bears are nearly as careful of their comfort as cats, and take the greatest pains to prepare a soft and warm bed, in which they lie at ease during their long sleep. The flooring of their winter-house is thickly covered with dried leaves and all kinds of similar substances, the smaller branches of the pine-tree being in great request for this purpose. In the Swedish language this moss-house is known by the name of "Korg."

Heavy and unwieldy as the Bear may seem to be, it is possessed of marvellous activity, and when disturbed in its den rushes out with such astonishing rapidity that it will baffle the aim of any but a cool and experienced hunter. One writer, who witnessed the sudden issuing of a Bear from its den and its escape from its pursuers, compares the animal to those children's toys that are popularly called "skip-jacks," and which execute somersaults by means of a twisted string, a wooden lever, and a little shoemakers' wax.

If captured when young, the Brown Bear is readily tamed, and is capable of mastering many accomplishments. It is a very playful animal, and seems to have a keen sense of the ludicrous, which sometimes causes it to overpass the bounds of good breeding. To its owner it displays a great affection, and can be trained to follow him about like a dog. Two of these animals belonging to Mr. Lloyd, and which he had tamed, were very gamesome in their disposition, although, as they increased in size and strength, their frolicsome disposition became rather annoying. They were extremely fond of their master, and would seek him on every occasion. If he fastened the door of his room against his troublesome pets, they would clamber up the side of the house, and gain access by the window.

It is said that if domesticated Bears be permitted to remain in a secluded place they will pass the winter in a torpid state.

The affectionate nature of the Brown Bear is not only exercised towards human friends, but towards each other. Two of these animals which were born in captivity were exceedingly attached to each other. One of the two was sold and removed from its companion, which immediately became uneasy at the protracted absence of its playfellow. So deeply was its affectionate heart wounded by the separation, that it became nearly mad, and at last contrived to make its escape from its place of confinement, evidently with the intention of searching after its lost friend. It was captured and replaced in its cage, but its health became so seriously affected that its owners were obliged to repurchase its companion and restore it to its disconsolate relation.

Savage as is the Bear when attacked, it is naturally of a kind and playful disposition, seldom inflicting injury except when urged by fear or hunger. Mr. Atkinson, in his valuable work on Siberia, relates a curious and interesting anecdote of the gentleness which naturally actuates the Brown Bear:

Two children, of four and six years of age, had wandered away from their home, and were after a little time missed by their parents, who set out in search of their offspring. To their horror and astonishment they found their children engaged in play with a large Bear, which responded to their infantine advances in a most affectionate manner. One of the children was feeding its shaggy playfellow with fruit, while the other had mounted on its back and was seated on its strange steed strong in the fearlessness of childish ignorance.

The parents gave a terrified scream on seeing the danger to which their children were exposed, and the Bear, on seeing their approach, quietly turned away from the children and went into the forest.

The same writer records a curious adventure with a Bear, which partakes largely of the ludicrous.

A woman had lost her donkey, and after a long and fatiguing search she at last came on the missing animal. Being very much irritated with the truant for his misconduct, she fell to scolding and beating him with the handle of a broom which she happened to be carrying. Her vituperation and castigation were, however, suddenly checked by the discovery that the animal which she was beating so unceremoniously was not her donkey, but a great Brown Bear. The astonishment of the two seems to have been mutual, for the Bear was evidently as much confused by the unwarranted assault as was the woman by the sight of her antagonist; so that after looking at each other for a few moments, the Bear turned tail and ran away as fast as his legs would carry him.

It is but seldom that the Bear will make an unprovoked attack on a human being, and when he does so, it is generally because he is rendered desperate by the pangs of hunger. In such a case, the Bear is greatly to be dreaded by the benighted traveller, especially if he happen to be journeying alone and has no companion who may share his watch.

That wild beasts of all kinds are scared away by fire is a well-known fact, but the hungry Bear is of so cunning a nature that it even sets at defiance the flaming circle which would at other times afford a secure protection to the sleeping traveller. It is true that the Bear does not venture to cross the fiery barrier, but it contrives to avoid the difficulty in a most ingenious manner. Going to the nearest stream, it immerses itself into the water so as to saturate its fur with moisture, and then, returning to the spot where the intended prey lies asleep, the animal rolls over the flaming embers, quenching the glowing brands, and then makes its attack upon the sleeper. This curious fact is well known among the natives of Siberia, so that they have good grounds for the respect in which they hold the Bear's intellectual powers.

The Bear is possessed of several valuable accomplishments, being a wonderful climber of trees and rocks, an excellent swimmer, and a good digger.

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